

1-1-1971

The predictability of theoretical knowledge of a psychomotor skill to the actual performance of that skill.

Ray Alan Johnson

University of Massachusetts Amherst

Follow this and additional works at: https://scholarworks.umass.edu/dissertations_1

Recommended Citation

Johnson, Ray Alan, "The predictability of theoretical knowledge of a psychomotor skill to the actual performance of that skill." (1971). *Doctoral Dissertations 1896 - February 2014*. 4116.
https://scholarworks.umass.edu/dissertations_1/4116

This Open Access Dissertation is brought to you for free and open access by ScholarWorks@UMass Amherst. It has been accepted for inclusion in Doctoral Dissertations 1896 - February 2014 by an authorized administrator of ScholarWorks@UMass Amherst. For more information, please contact scholarworks@library.umass.edu.



312066 0298 3242 3

**FIVE COLLEGE
DEPOSITORY**

© Ray Alan Johnson, 1971

All Rights Reserved

THE PREDICTABILITY OF THEORETICAL
KNOWLEDGE OF A PSYCHOMOTOR SKILL
TO THE ACTUAL PERFORMANCE OF
THAT SKILL

A Dissertation

by

Ray Alan Johnson

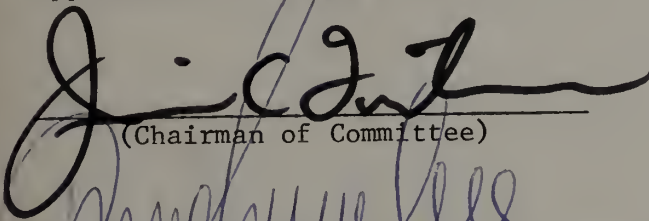
Submitted to the Graduate School of
the University of Massachusetts in partial
fulfillment of the requirements for the degree of

DOCTOR OF EDUCATION

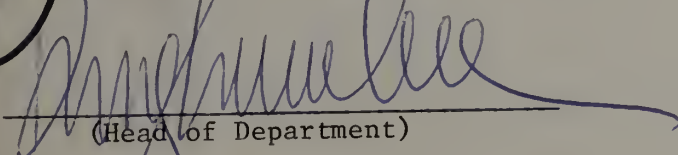
August 15, 1971

Major Subject: Vocational

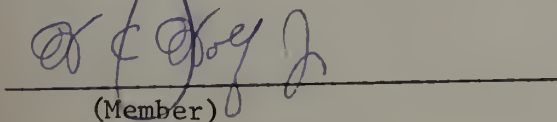
Approved as to style and content by:



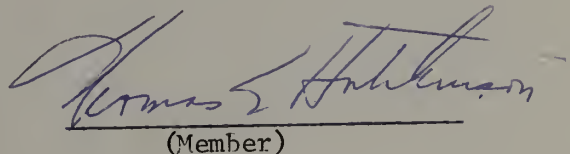
(Chairman of Committee)



(Head of Department)



(Member)



(Member)

(Member)

PLEASE NOTE:

Some Pages have indistinct
print. Filmed as received.

UNIVERSITY MICROFILMS

Filmed as received

without page(s) iii.

UNIVERSITY MICROFILMS.

ACKNOWLEDGEMENTS

In writing this dissertation, the writer is indebted to a number of persons. To my committee and their enduring patience, and particularly to Mr. Russell Booth who gave unselfishly of his time and talents in the execution of this study.

Education is a process that once set in motion never ceases. Dr. Newton Gaines and George Bullock are two unique and outstanding spiritual beings that have had substantial influence on my life and deserve mentioning in this document as they set standards by which have brought me to this point in my life.

Two other individuals have had a great influence on my life and in making this document possible; I shall only refer to them as William and Sieger.

Finally, to my wife, La Nelma and our children, there are no words that can adequately express my feelings for their personal sacrifice and steadfast loyalty.

Oh yes, and to Ernie for the word "perusal."

TABLE OF CONTENTS

ACKNOWLEDGEMENTS	iv
LIST OF GRAPHS AND CHARTS	vii
Chapter	
I. THE PROBLEM	1
Orientation	
Introduction	
Statement of the Problem	
Generalizability and Limitations of Study	
II. REVIEW OF RELATED RESEARCH AND LITERATURE	7
Introduction	
Classifying Performance Objectives	
Tangible Product Measures	
Measures of Specific Behavior Elements	
Gross Performance Measures	
Criterion Reference Tests	
Assessment of Validity	
Reliability	
III. METHODOLOGY OF THE STUDY	16
Measurement Errors	
IV. ANALYSIS OF DATA	22
Introduction	
Histograms	
Biserial Correlation	
Variable Frequency Count	
V. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS	41
The Problem	
The Method	
Hypothesis and Summarized Results	
Related Findings	
Conclusions and Recommendations	

APPENDIX A -- Correlation Matrix of Theoretical and Performance Variables	46
APPENDIX B -- Biserial Correlation Matrix	86
APPENDIX C -- Variable Frequency Count	97
APPENDIX D -- Theoretical Test	103
APPENDIX E -- Performance Test	114
APPENDIX F -- Definition of Terms	116
REFERENCES CITED	118

LIST OF CHARTS AND GRAPHS

HISTOGRAMS

Figure	Page
A (P.V. #1, #14) and (T.V. #93, #98-#103)	25
B (P.V. #1, #14) and (T.V. #1-#6)	25
C (P.V. #1, #14) and (T.V. #70, #72)	25
D (P.V. #1, #14) and (T.V. #73, #77)	25
E (P.V. #4) and (T.V. #42, #44, #46, #65, #75, #89, #98, #99, #101, #102, #103)	26
F (P.V. #2, #3, #5, #7, #8, #10, #11, #12) and (T.V. #1-#6)	27
G (P.V. #2, #3, #5, #7, #8, #10, #11, #12) and (T.V. #48-#55, #66, #77, #93, #94, #98, #101, #102, #103)	28
H (P.V. #7, #10, #11) and (T.V. #124, #126, #127, #128)	28
I (P.V. #3, #5, #12) and (T.V. #122, #129)	29
J (P.V. #2, #6, #8) and (T.V. #122-#129)	29
K (P.V. #9, #13) and (T.V. #122-#129)	30
L (P.V. #13) and (T.V. #106-#113)	31
M (P.V. #13) and (T.V. #73, #77, #93, #98-#103)	31
N (P.V. #16, #17, #19, #20, #21, #22, #24) and (T.V. #1-#6)	32
O (P.V. #16, #17, #19, #20, #21, #22, #24) and (T.V. #34, #40) and (T.V. #36, #39)	32
P (P.V. #16, #17, #19, #20, #21, #22, #24) and (T.V. #42, #44, #46)	33
Q (P.V. #16, #20, #22) and (T.V. #49-#52, #54-#62, #64, #66, #67, #74, #76, #79, #91, #94)	33

HISTOGRAMS

Figure	Page
R (P.V. #16, #19, #20, #21, #22, #24) and (T.V. #92)	34
S (P.V. #17, #19, #21, #24) and (T.V. #49-#52, #54-#62, #64, #66, #67, #74, #76, #79, #91, #94)	35
T (P.V. #17, #19, #21, #24) and (T.V. #130-#137)	36
U (P.V. #16, #20, #22) and (T.V. #130-#137)	36
V (P.V. #15) and (T.V. #14-#22)	36
W (P.V. #23) and (T.V. #14-#22)	37
X (P.V. #15, #23) and (T.V. #7-#13)	37
Y (P.V. #18, #25, #27) and (T.V. #130-#137)	38
Z (P.V. #18, #25, #27) and (T.V. #51, #75, #83, #91, #93, #98, #99, #100, #101, #102, #103)	38
AA (P.V. #26, #28) and (T.V. #130-#137)	38
AB (P.V. #26, #28) and (T.V. #59, #80, #81, #104, #105)	39

CHAPTER I

THE PROBLEM

Orientation

If you don't know where you are going you might end up someplace else.⁹

In 1965, Stanford University received the largest grant ever given by the U.S.O.E. Division of Vocational Technical Education. The Project was titled "Flexibility for Vocational Education through Computer Scheduling." One of the objectives of this project was to "measure the extent of use of Performance Criteria in the areas of Vocational Instruction." This particular objective soon became one of the primary focuses of the project. Preliminary investigations indicated that Vocational Education was far ahead of most areas of Education in possessing many of the necessary curricular components to make a Performance Curriculum work, however, it was also discovered that Vocational Education was governed and controlled by some of the most rigid and restrictive rules and regulations found in secondary schools.

The result of Federal and State laws governing the operation of Occupational programs is that the restrictive element of time has tended to filter down the evaluation of student progress. Sometimes "time" as the primary element of achievement is more harmful than helpful. Mager⁹ states that

time spent in a learning situation without some form of communication to the student of how he is doing in relation to what it is he is trying to comprehend is often a meaningless experience. CAM,³ a program for monitoring student progress, shows that many times a student achieves performances early in the course of instruction but has to spend the "time" that he was scheduled for in the Course.

During the project work at Stanford University, national conferences were held and people knowledgeable of Vocational Education and Performance Criteria were brought together to consult and find ways of developing and implementing Performance Criteria in the various Vocational Areas. It soon became apparent to the personnel involved in this endeavor that "time" is not always a good criteria of measuring competency and it was often quoted that "if you don't know where you are going you might end up someplace else."⁹

From these early efforts of establishing Performance Criteria emerged a concept of Pre-service Teacher Education based on Performance Criteria and Instructional Alternatives. In 1968, the U.S.O.E. again funded several large projects which were to concentrate their efforts on this single concept of Performance Criteria and Instructional Alternatives (Appendix "A"). One, entitled the "Model Elementary Teacher Education Program," was located at the School of Education, University of Massachusetts, a parallel effort was applying the same concept to the training of teachers in the field of

Distributive Education.

These efforts began to show a growing need, not only to train teachers through a system of Performance Criteria and Instructional Alternatives, but to see what could be done at the primary and secondary level to implement the same system. One strategy that evolved was an Evaluation System for vocational education based upon Performance Objectives.¹⁰ This development was initiated by Drs. Jimmie Fortune, David Berliner, and Thomas Hutchinson. The process for developing and implementing the Evaluation System was to train Vocational teachers to write Performance Objectives; to code, synthesize and compile the objectives and ultimately to derive evaluative instruments on these objectives. This study is an extension of the work initiated by Fortune, Berliner, and Hutchinson

Introduction

Vocational Education in every state is governed by Federal and State laws. Many of these laws were enacted to establish and upgrade the profession. Many of the laws, as they are not stated, have outlived their usefulness. The laws that have to do with funding, certification (both of students and teachers), and curriculum have one element that has become a restrictive factor and has hampered the improvement of vocational education. That element is the use of time in programs or activities to designate program or activity competence. Vocational programs in Massachusetts are

principally evaluated by time.¹² A program is classified as vocational and qualifies for funding only when it meets the time criteria. For example, an acceptable program in Machine Trade is one that is designed to require the student to spend the equivalent of three hours per day every week for at least three years in the presence of an experienced Machine Trade man. Also, the program requires that the instructor spend at least eight years in the trade before he can become a teacher.

In Massachusetts, the instructional program directly related to a vocational trade is divided into two segments, "related" and "shop." Written exams are frequently given in the related (theory) classroom but, other than job completion or teacher observation, there is a noticeable absence of criteria instruments and measurement techniques in the vocational shop areas. The students leave the high school with a certificate showing that they have met certification requirements in the vocation, when in reality, they have only been evaluated on their theoretical knowledge. Their practical (manipulative) skills usually have not been systematically measured.

A perusal of the current measurement literature indicated that more and more thought is being given to the establishment of meaningful performance objectives. Although this particular study did not focus its investigation on the process or content of performance objectives, it should be emphasized that before a criterion reference test is developed, valid

and realistic work performance objectives must be available.

Several questions were asked with regard to an objective before it is used as a basis for developing the criterion reference tests. For example, does the objective specify the conditions under which behavior is to be observed? Does the objective define standards the student should meet? Once these questions have been examined and the test developed satisfactorily answered them, he proceeded with the development of a criterion reference test.

This study was based upon the feasibility of deriving test instruments utilizing performance objectives. The tests were composed of criterion reference items of which one section measured a student's theoretical knowledge and the other section assessed a student's manipulative ability.

Statement of the problem

The lack of research data about performance testing has left vocational educators reluctant to implement a systematic evaluation system of performance objectives in the cognitive and psycho-motor domains. The specific problem outlined in this study was to ascertain the degree of correspondence between the performance of psycho-motor skills and the theoretical knowledge of those skills by administering performance testing to ninth grade students enrolled in machine shop courses in a Vocational School.

Generalizability and limitations of the study

The Diman Regional Vocational-Technical School was selected as the site for administering the test instruments. This limited the generalization of the results. However, this was only a pilot effort that will help to substantiate internal validity and should later be tested for external validity.

Limiting the study to one occupational area within one school will increase the efficiency of training the teachers in writing performance objectives and will not have the problem of obtaining acceptance of objectives and tests from different school populations.

Once the objectives were written and accepted by the study team, the criterion reference tests were developed for the related (theoretical) and shop (practical) objectives. Face validity for the two sets of tests were established by the machine shop related and shop instructors who wrote the objectives and a corresponding set of instructors in a similar program in another school.

CHAPTER II

REVIEW OF RELATED RESEARCH AND LITERATURE

Introduction

Historically . . . , "There are records of the use of written examinations, about 4,000 years ago, in the schools of ancient China"¹⁶ and "2,300 years ago, in academic subjects in Athens, complex explanations of statistical treatment of test data were discussed."¹⁸ In order to carry an educational idea from conception to fruition takes a very long time, perhaps this is due to the power of what is familiar as opposed to that which is unfamiliar. Accountability is a concept that has risen to the forefront of Education in the 1970's. Educators are now examining various means and methods to insure accountability for accomplishing their objectives. Accountability is dependent upon evaluation which is in a primitive state itself; hence, as the latter becomes more sophisticated, progress can be anticipated in the former. The evaluation instruments that are currently available, most of which are written examinations, are limited when applied to the areas of education that concentrate on developing psycho-motor skills.

In the United States there are only five states that are using occupational competency testing in the field of Education. These tests are largely of the paper and pencil variety

with some requiring actual performance in simulated job situations. Of those tests that did contain a Performance element, the only factor judged to be excellent was currency of content.¹⁵

Reilly states that ". . . it appears that trade knowledge (theory) and trade performance (practical) tests are not highly correlated and that written examinations alone are a poor indicator of trade competence."⁴ This conclusion is supported by Stuit who says: "Although it had been assumed that written tests sufficed to indicate what a man had learned in a service school, the evidence showed that performance tests and improved shop grades were not closely related with written test grades."¹⁷ Both Reilly and Stuit used the words "Trade Knowledge" in the broadest sense. This is especially true of Stuit who did his major work in the Armed Services (Navy) during war time. Stuit uses the words "written test" or "performance test" to represent a series of standardized tests such as Mechanical Aptitude, Mathematical Ability.

Stuit says: "the biggest problem and the weakest point of my research is the lack of criteria of what was expected of a student to perform so valid measures could be made."¹⁷ Because the Reilly and Stuit studies used instruments of questionable validity, their results do not necessarily apply to the relationship between carefully constructed written and performance tests. What is needed is a study based on a criterion reference test which will provide some data on the

generalizability of the Reilly and Stuit findings under conditions of measurement of specific performance objectives.

Classifying Performance Objectives

Bloom² identifies a classification system of three basic types (cognitive, psycho-motor, and affective) and indicates that some objectives may be classified in more than one of the categories. Harmon,⁷ also identifies three basic types of performance objective behaviors (verbal, physical, and attitudinal) and indicates that some objectives do not fall in any of the three categories while others might involve two or more behaviors. When developing the measures of manipulative behavior the verbal and attitudinal behaviors which contribute to this physical performance should be taken into account with the measurement design itself. If, however, the objective requires that both task product and task process be measured it would be most appropriate to develop a combination of related theory and practical instruments.

Grouping the objectives to determine what is to be measured (process, product, or combination) will determine the way in which information is to be gathered. Wilson¹⁹ created five subgroups of operational performance measures. Three discussed below are directly applicable to school setting: (a) tangible product measures, (b) measures of specific behavior elements, and (c) gross performance measures.

Tangible product measures

Vocational education is an area that applies theoretical knowledge to manipulative skill development. Any objective that can be evaluated by the characteristics of task, job or operation that a student actually completes could be measured as a tangible product. Most areas of Vocational Education would have many objectives in this category. For example, the making of a vise, or Milling Gear, would illustrate this type of objective in a machine shop. In a Carpentry course the production of a hutch or dining room table would be further examples of Tangible Products against which objectives could be measured.

Tangible product measures have some limitations. The most apparent is the inability to obtain an immediate judgment of the process which might affect the quality of a product over an extended period of time, such as hair falling out from an over processed hair-do, or a Milling cutter breaking because it was hardened too much. Even more important could be that students did not observe certain safety rules. These problems could not be apparent in an initial finished product evaluation, but could be discovered if certain observations were made of the process used to produce the product.

Measures of specific behavior elements

The focus of the second type of measure, measures of specific behavior elements, is upon the process. A task or

job analysis would ascertain certain skills that a student must be competent to perform and an order of performance of those competencies. The use of check lists makes it possible to incorporate a considerable amount of objectivity into this type of instrument. A weakness of this procedure is that the observer using the check list may be asked to make many subjective judgments and in the case the instrument lacks standardization of the techniques of evaluating the performance. In this situation as the observer changes so does the instrument. Teacher observations, or judging horses, diving, or beauty contests, are some extreme examples of measures of specific behavior elements.

Gross performance measures

The third applicable category of operational performance measure is termed gross performance measures. In this situation the term "gross" indicates a very crude measure of a performance objective. For example, a new teacher has higher grade averages on her students' report cards than the teacher last year. High grades, although easily assessed, are only an indirect measure of the teacher's performance. There are many intervening variables that could cause high grade point averages: for example, better students, new resource materials, different teaching methods, lower standards of grading, or located in a different room with better lighting, ventilation and other environmental influences. It is problems such as

this that lead to the lack of validity of this kind of measure.

Criterion reference tests

A proficiency test may be considered valid if it discriminates between the proficient and non-proficient in a given skill, or better still, if it successfully discriminates among individuals with various degrees of the skill. While an aptitude test may have an indefinite number of validities, depending on the criteria which it predicts with varying degrees of success, a valid proficiency test must measure what it purports to measure. No other concept of validity is applicable; . . .⁴

A proficiency test, like all other tests, can be defined as a stimulus situation which has been constructed to evoke the particular kinds of behavior to be measured or assessed. In one sense, then, the validity of a test instrument is reflected in the degree to which the behaviors evoked provide a means for consistently differentiating among individuals according to their performance. In particular, a proficiency test can be considered valid if it discriminates among individuals presumed to range from no proficiency to high proficiency. A valid test, then, is established by demonstrating that the test scores reflect differences in skill levels of the performance being assessed.⁶

One of the difficulties in the Vocational Shop is that the vast majority of Vocational training programs have no way of duplicating the ultimate criterion of the training program: occupational entry. The vocational shop or laboratory tries to simulate the actual job condition. Problems arise with the Vocational school trying to keep up with technological changes. Also, one can in no way predict with any degree of certainty the actual job a student will enter.

The proficiency test used at the completion of a training course . . . may establish the degree to which an individual has acquired knowledge about his job or has mastered the necessary skills. It does not demonstrate that the individual will perform effectively in the job situation. An individual with generally proficient skills may turn out to be an occupational failure . . .⁶

Measurement of a student in a Vocational shop should be focused upon an objective or set of objectives. Can a student perform a specific task within accepted performance standards? An instrument designed to answer such a question usually does not predict any consequent behavior. However, attempts must be made to collect data which do predict behavior on the actual occupational choice.

Valid work performance tests should be developed from a description of the behavioral outcomes to be measured. The derivation of performance objectives provides the criteria upon which the measurement instrument can evolve.

Performance objectives as a rule are not formulated in terms of a singular unique behavior, but as a more generalized complex class of behaviors. The concept of sampling a domain of performance behaviors is relevant even if taken within an instructional situation where performance objectives provide an adequate focus for the instruction.¹³

Assessment of validity

A common method of assessing the content validity of a performance is referred to by DuBois, et al., as ". . . validi-

ty by direct judgment."⁴ The general process is to select a panel of experts to judge (1) whether the behaviors measured are an adequate representation of the domain of interest, and (2) whether the behaviors measured will discriminate between the skilled and the unskilled in the performance domain.¹

A less common method but one given strong support is suggested by Nunnally.¹³ Content validity is the extent to which the measured performance "looks like" it measures the relevant domain of performance behaviors. McGuire and Babbott¹¹ have commented on the importance of "face validity" as a source of improving the content validity of performance measures. Such a comment should be of importance to the vocational educator since their work dealt with simulation techniques in measuring problem-solving skills.

Although Vocational programs may considerably lack in simulating the actual world of work (the variety of jobs and the technological advances), the further one gets from the existing performance situation in establishing the measurement conditions the less relevant the task appears to the student.

Reliability

"Reliability constitutes the degree to which an instrument measures consistently what it does measure."⁸ Glaser and Klaus,⁶ have grouped measurement errors that could affect the reliability of a work performance measure. (1) environment

influences, (2) situational influences, (3) test instrumentation, (4) sampling, (5) behavior complexity, and (6) examinee reactive effects. Each of these six groups of measurement errors is discussed in Chapter III.

CHAPTER III

METHODOLOGY OF THE STUDY

Although the design of this study encompasses a fairly short duration of time, there were many developments as described in the preceding chapters that gave the investigator the prerequisite skills and information which made this particular study possible. This chapter describes the procedures that were followed which had a direct relationship to the design of this study.

Since it was essential to have a school and faculty that was receptive to the idea of evaluating vocational programs by performance objectives, a quick survey was done to identify a cross-section of vocational schools that would participate in such an evaluation project. Following the selection of six schools to participate in this pilot project in April, 1970, a Conference was held, at which each school sent two Vocational Instructors. These 12 instructors were trained for four days in the derivation and wording of Performance Objectives. Subsequently, one of the six participating schools, Diman Regional Vocational-Technical School, located in Fall River, Massachusetts, was selected as the site at which the data would be gathered for this study.

After reviewing the research and designing the proposed

study, it was explained in detail to the Superintendent-Director of Diman Regional Vocational-Technical School. He gave his consent to use his school as a base for gathering the necessary data and also gave many helpful suggestions concerning his impressions of the study. The school guidance counselor was consulted and the decision was made to list the students' chronological age and his raw scores of intelligence quotient, space relations, and mechanical reasoning. It was anticipated that this historical data might provide added information when compared to the student's test scores.

Because of early efforts of Mr. Russell Booth to construct an evaluation instrument to test the completion of the machine shop objectives, the machine shop course was chosen as the area in which to gather the necessary data for this study. After consultation with Mr. Russell Booth and the other machine shop instructors, the freshman class was selected as the test group. The freshman teachers for the machine shop course were then asked to write performance objectives for the engine lathe at the freshman level.

After editing and revising the objectives so that they were acceptable to all parties (Related Teacher, Lab Teacher, and Principal Investigator) the objectives were compared and any objective in the lab that did not correspond to an objective in the Related area was eliminated and vice versa. The resulting objectives were then used as a basis for deriving the written and the performance test instruments. Mr. Russell

Booth was asked to design a job that would contain all the lathe operations that a freshman student would be required to know how to perform at the end of his freshman year (Appendix E). The resulting blueprint was then compared with the machine shop objectives to see if there were any skills that were not represented. Each operation was then marked on the blueprint for future performance checks and a chart was prepared so that the amount of time to perform each operation could be recorded by the individual student.

The machine shop related textbook and other resource materials were used in developing the written exam that would test the students' theoretical knowledge. Test questions were written so as to refer to one or more machine shop objectives. This was done so as to have each objective represented by more than one test item. Through consultation with the machine shop instructors, the written instrument was revised until acceptable by the instructors (Appendix D). The final written instrument was composed of fifty-eight multiple choice items, fifty-six pictorial identification items, eighteen measurement items and seven matching items. The objectives and instruments were taken to machine shop instructors in another vocational school and face validity was established.

Measurement Errors

When developing the instruments and designing a procedure of Administration, sources of measurement error were considered. To lessen the effects of any adverse environmental conditions or situationed influences, it was decided to make the exams as close as possible to routine machine shop procedures. No advance notices were given of the exams and they were administered to all students at the same time. The job given to them to perform in the machine shop was expected to be performed on the engine lathe that the students were used to working on every day. The theoretical test used the same type of answering sheet that the students had used all year. These procedures should have eliminated most measurement errors that might result from environment conditions, situational influences, or test instrumentation.

To eliminate the element of chance in measuring specific behaviors the written instrument contained several questions about each performance objective. The lab test was made so that whenever possible the student had to repeat a skill so as to check his proficiency and to have a wide-range score to maximize the potential variability. This procedure was designed so as to eliminate the measurement error in the sampling process.

A fifth source of measurement error dealt with was the

complexity of the behavior which was being evaluated. As Glaser and Klaus indicate:

If the behavior being measured involves many dimensions of performance, the items included in the test instrument will necessarily be heterogeneous. Since it is possible that an individual's proficiency level may fluctuate considerably from one dimension to the next, each component in each sense represents a somewhat different test.

When consulting with the machine shop instructors about the performance objectives (the accomplishment of which were to reflect the proficiency of the students), they were concerned that the element of time was not reflected in the objectives. To help gather information on this item, a chart was designed to register the time spent on each operation and a composite time. In this manner, those students could be accounted for that did excellent performance but took an extra long time to do it.

The only source of measurement that was unable to be dealt with was reactive effects. There was no way to account for students that might be unusually tired that day or sick or just lacked motivation to do a good job on the test.

In the sample group there were thirty-one students whose ages ranged from thirteen years to sixteen years and three months. They were all enrolled in the machine shop course and were divided into two groups. While one group was in the related classroom and taking its academic subjects the other group was in the machine shop lab. After two weeks the two groups rotated and the group that was in the lab went for

classroom instruction and the group that was in the classroom went to the lab.

The instruments were administered to the two groups and then the students rotated from lab to classroom and vice versa and the tests were given again. The results of the two exams were coded and computer scored to be as objective as possible. The data was then analyzed by various means which are discussed in Chapter IV.

CHAPTER IV

ANALYSIS OF DATA

Introduction

In this chapter is presented the analysis of data in testing the hypothesis. More specifically, the task was to determine the degree of predictability of theoretical testing of a psycho-motor skill to actual performance of that skill. The hypothesis predicted that theoretical testing is a poor indicator of the manipulative ability of a person. When examining the correlations to determine if the hypothesis was correct, one would not want to find correlations above .5 for that would reflect a positive correlation between theoretical knowledge and manipulative ability.

A correlation analysis of all the variables was undertaken. These results indicated neutral correlations between $-.3$ to $.3$ in more than 75 per cent of the correlations computed. The complete correlation matrix is presented in Appendix A. The hypotheses were tested by means of the tetrachoric "r." The tetrachoric "r" was used as it is an appropriate way of estimating the correlation between two underlying variables from the dichotomous data by single test items. The scores on the test items were reduced into two categories artificially, enabling a coefficient to be obtained which is numerically equivalent to a Pearson "r" and

may be regarded as an approximation to it.

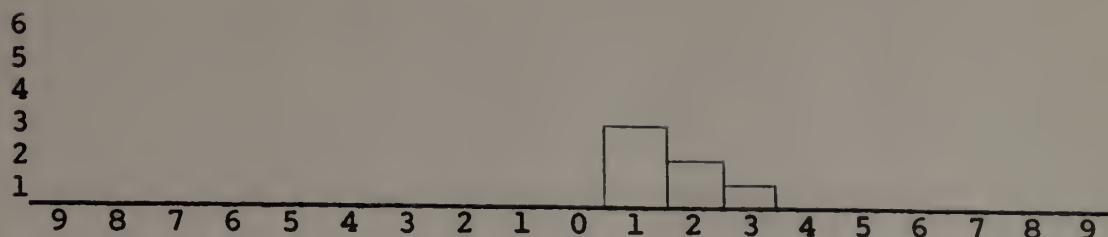
The study contained 167 variables which were divided into two instruments, the theoretical and the performance. The theoretical instrument contained 139 variables divided into three categories: pictorial identification, matching, and multiple choice questions. The performance instrument resulted in 28 variables representing operations performed on the engine lathe.

Histograms

To bring out the manner in how various sets of theoretical variables correlated with each of the 28 performance variables, a Histogram (a charting technique to show discriminate validity) was used to pictorially show the extent of correlation between individual and sets of theoretical and performance variables. On X axis is found a range scale going from left (-1.) to right (.1); on the Y axis is a scale reflecting the number of times a particular correlation was repeated.

The correlations were grouped so that any correlation that fell between, say, a .150 and .250 was charted as .2. Let us say, for example, that there were six correlations and they were .118, .126, .126, .158, .175, .321; the following

histogram would be charted



Data presented in the following 28 histograms reflects the correlations of the various performance variables with their corresponding theoretical variables.

Figure A contains theoretical variables #93 and #98-#103, which reflect a student's knowledge about tool bits. The range of distribution is from -0.452 to 0.625, but the highest frequencies are from -.2 to .2, which neutralizes any positive or negative findings. The performance variables (#1 and #14) in figure A as well as B, C, and D are the only variables that contain a facing operation. The facing operation requires using a different lathe holding device than do all other variables. Theoretical variables #70 and #72 are multiple choice questions concerned with those holding devices which are reflected in figure C.

Figure B shows the histogram for the theoretical variables #1-#6, which again is the identification of the parts of a tool bit and only represents distant prerequisite knowledge.

Figure D is a histogram that reflects strong support to the hypothesis of this study. It contains performance vari-

ables #1 and #14, and it also contains the theoretical variables that were written specifically for this performance: variables #73 and #77. These two variables are multiple choice questions which are testing the student's knowledge of how to perform the facing operation.

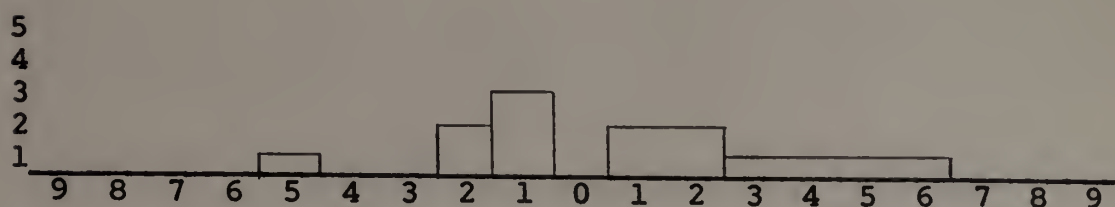


Figure A

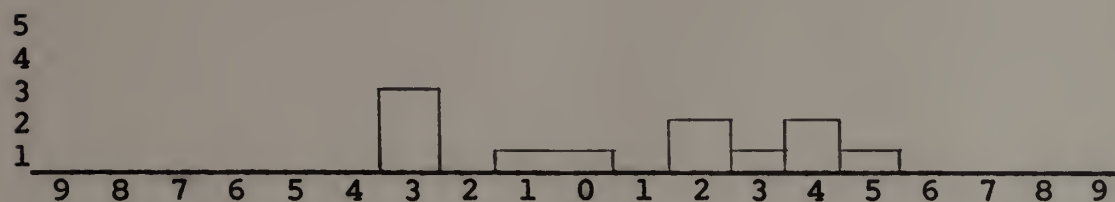


Figure B

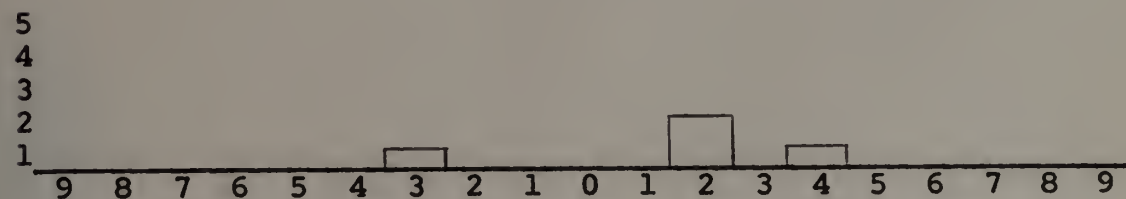


Figure C

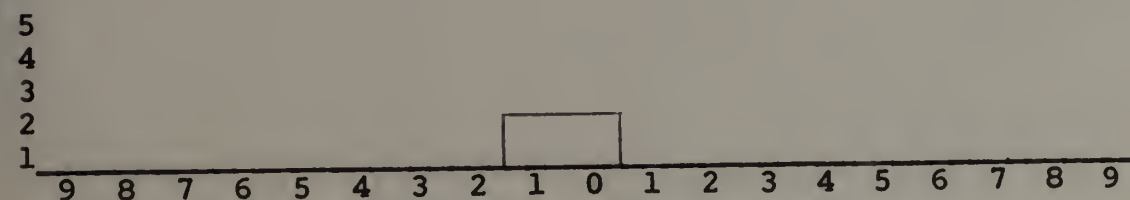


Figure D

The use of the cutoff tool is best demonstrated with performance variable #4. In figure E, theoretical variables #42, #44, #46, #75, #89, #98, #101, #102, and #103 represent multiple choice questions about necking operation and the tools necessary to perform the operation. These theoretical variables are correlated with performance variable #4. The correlations are found to lie in four groups from -0.383 to 0.247 of which the highest frequency is at .0. This set of correlations is another example which gives strong support to the study hypothesis.

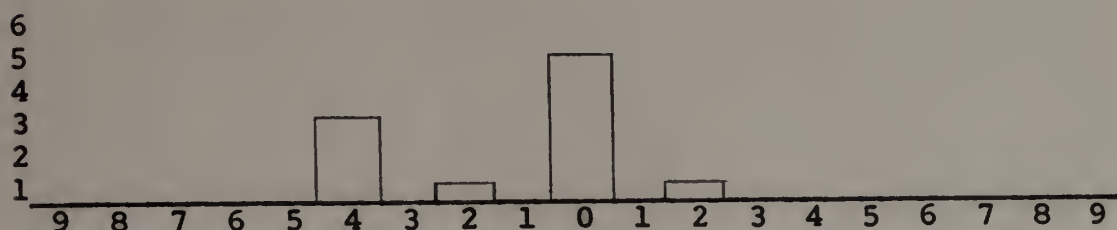


Figure E

Performance variables #2, #3, #5, #6, #7, #8, #10, #11, and #12, have a common prerequisite skill; the sharpening and use of a straight turning tool bit. They were all correlated with the theoretical variables #1-#6, which requires the identification by name of the parts of the straight turning tool bit from a pictorial representation.

The histogram in figure F shows that the correlation varies widely and somewhat evenly from -0.788 to 0.565. There are more positive than negative correlations with the

average of the correlations centered at .0.

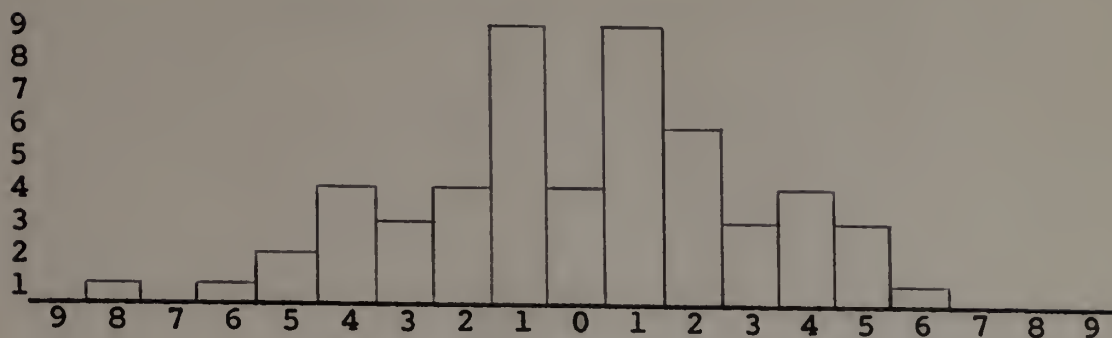


Figure F

Theoretical variables #48 through #55, #66, #77, #93, #94, #98, #101, #102, and #103 represent multiple choice questions about the operation of the engine lathe in cutting to square corners. Figure G shows the correlation of these multiple choice questions with performance variables #2, #3, #5, #7, #8, #10, #11, and #12, each of which contains the operation turning a square corner.

Although the correlations ranged from -0.878 to 0.553 there is a very high frequency distribution between 0.3 to .3 with the highest frequency at .0. This information would give strong support to the hypothesis of this study that theoretical tests are poor indicators of manipulative ability.

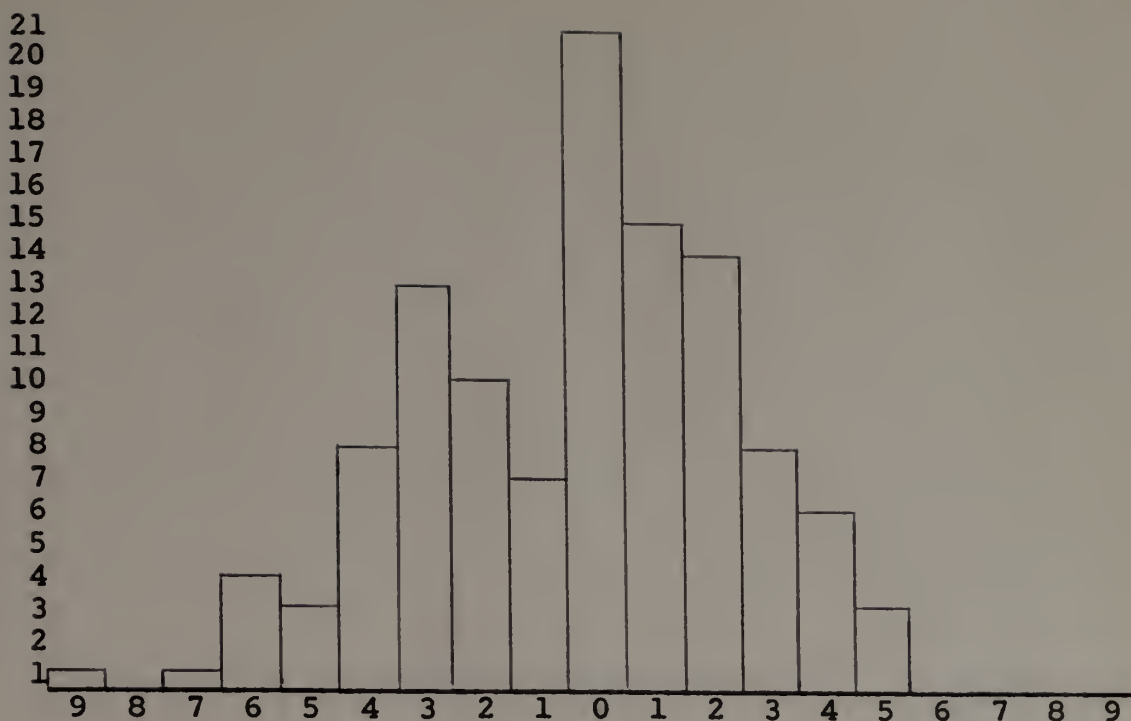


Figure G

The linear measurement variables (#124, #126, #127, and #128) when correlated with the performance variables #7, #10, and #11, show in figure H a narrowly grouped set of correlations ranging from 0.052 to 0.295 and with a high frequency at $-.1$.

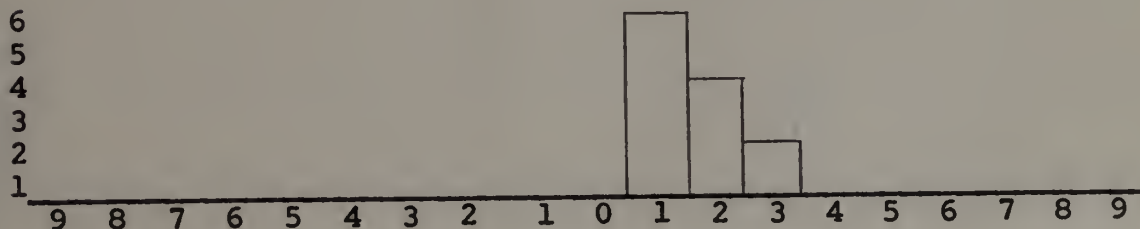
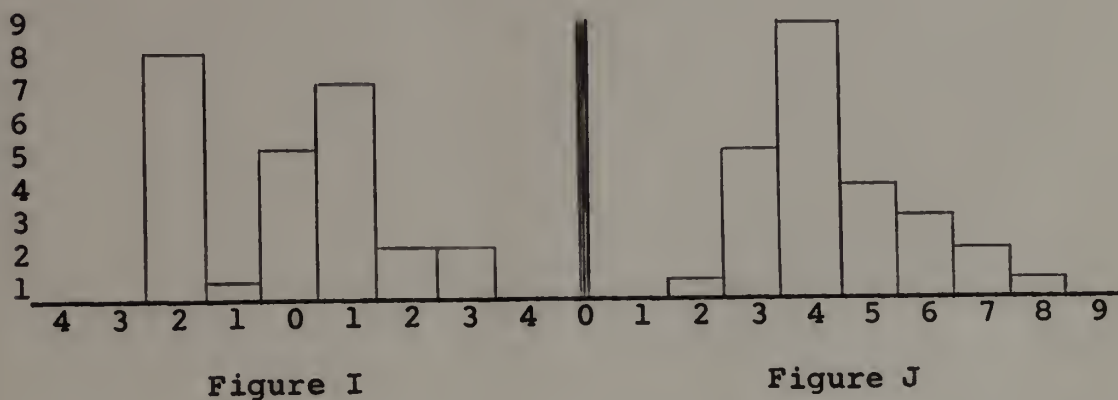


Figure H

The theoretical variables in figure I and J represent pictorial steel rule measurement problems. When variables #122-#129 were correlated with performance variables #2, #6, and #8 (which required small necking operations), the correlations were all positive ranging up to 0.783 with the highest frequency around .4. When the same theoretical variables were correlated with operations requiring a more difficult use of the steel rule, the correlations ranged from 0.194 to 0.305 with the highest frequency at -.2.

One might hypothesize from this information that while the student's theoretical knowledge remains consistent, the degree of proficiency in applying that knowledge varies dramatically.



As represented in figure D, the steel rule measurement problems which are pictorial can be a slightly positive indicator of performance. Figure K, which contains performance variables #9 and #13, reflects even in a more substantial way

the positive influence of such an instrument. There were no negative correlations with the variables #122-#129 and the highest frequency was centered on .4.

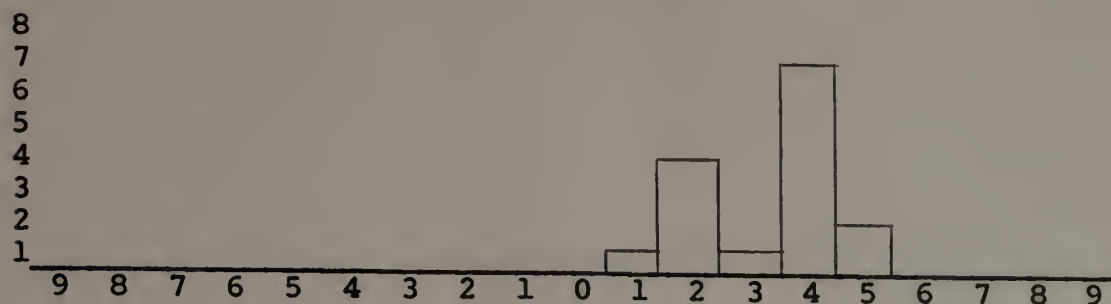


Figure K

In figure L performance variable #13 and theoretical variables #106 through #113 have only positive correlations which fall between the 0.082 and the 0.373 level. The theoretical variables in figure L have to do with pictorially identifying the lathe tool necessary to perform the required operation.

Performance variable #13 also requires the knowledge of sharpening a tool bit and use of the lathe for a cutting off operation. Figure M reflects the theoretical variables (#73, #77, #93, and #98-#103) which contain the knowledge required to perform a cutting off operation. The correlations are grouped from 0.699 to 0.364 with the highest frequency of a -.3.

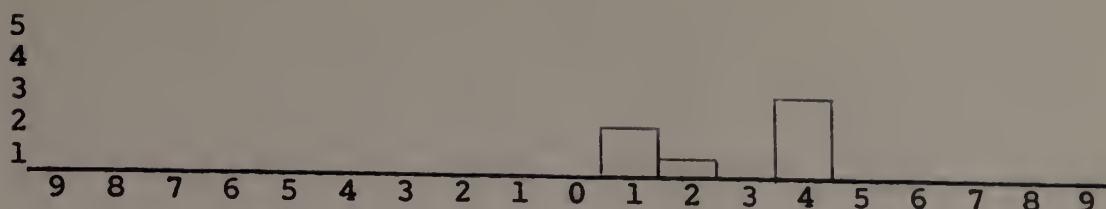


Figure L

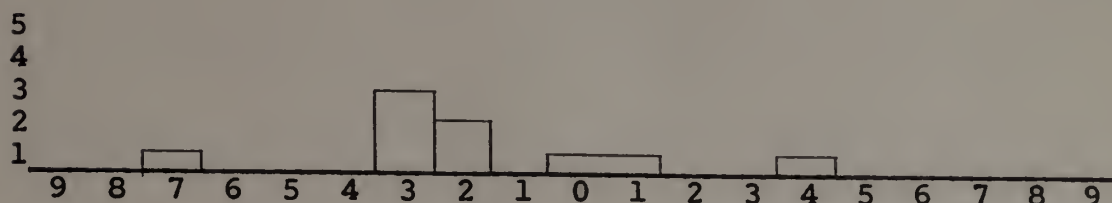


Figure M

Performance variables #16, #17, #19, #20, #21, #22, and #24 have one thing in common: they are diameter turning operations. Figures N, O, and P reflect the correlation of various theoretical variables which represent knowledge of tools, tool bit, equipment, and procedures required to perform these operations.

Figures N and O contain the theoretical variables of tool bit and equipment identification. Figure N is tool bit identification and reflects a widely and somewhat evenly distributed correlation. The highest correlation is at 0.1 but the average correlation centers around $-.2$. Figure O represents the theoretical variables that relate to identification of the parts of a lathe from a picture. This figure contains two separate histograms, one of which has entirely negative correlations and one of which has only positive correlations.

The difference is, for those parts of the lathe which the students use most often they can easily identify (positive correlations) and those parts which are seldom used the students could not identify by name, even though they used them in the operation performed (negative correlations). Figure P is the histogram which has the theoretical variables (#42, #44, and #46) for identifying pictorially from a picture the tools required in diameter measurement. The correlations are from -0.549 to 0.473 and the highest frequency is at .0.

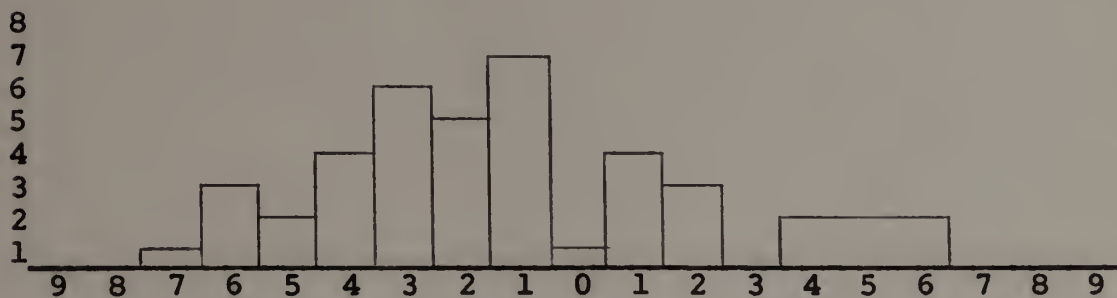


Figure N

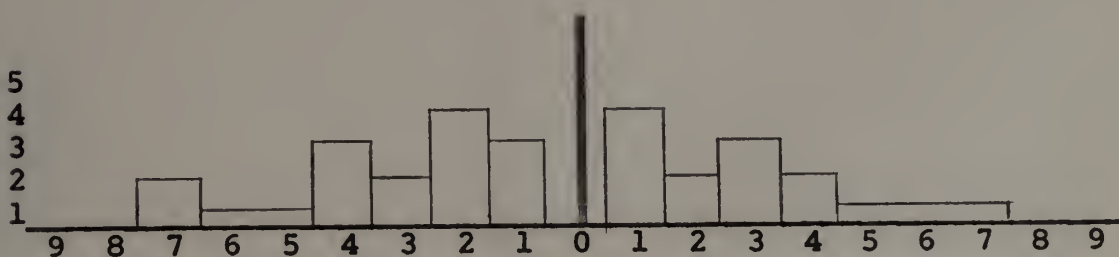


Figure O

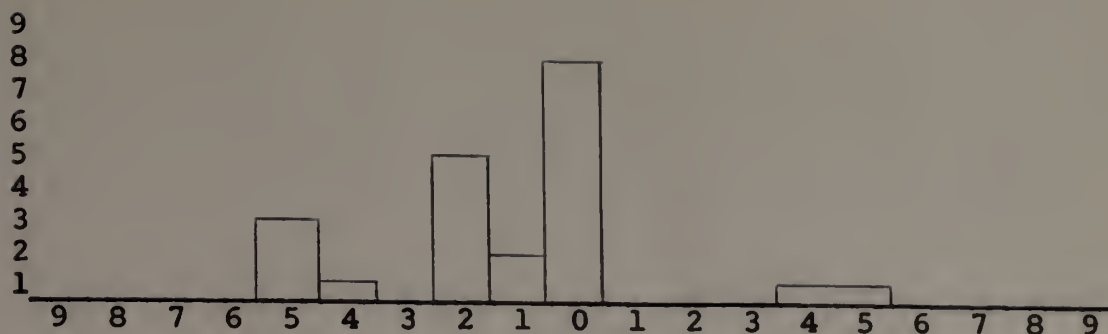


Figure P

Performance variables #16, #20, and #22 are all small internal diameter turning operation. All multiple choice questions that contain information about tool, equipment, or procedures of small internal diameter turning were correlated with these performance variables. Figure Q represents the histogram of this correlation.

The range is widely distributed and the average of the correlations is centered around .0 with the highest frequency around .1 and .2.

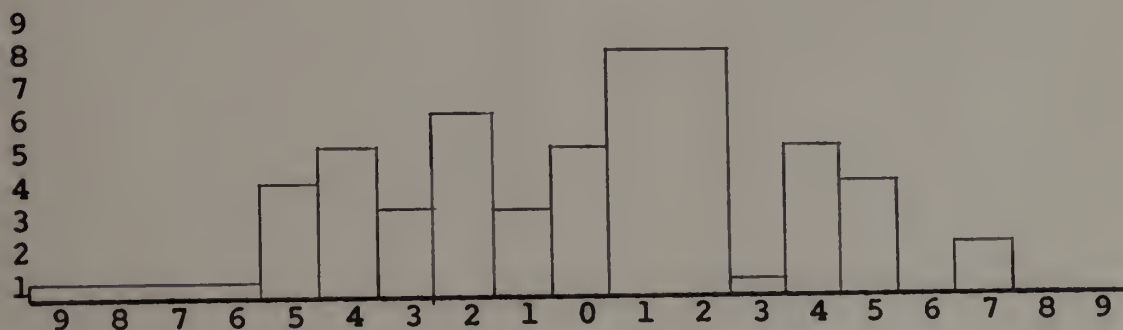


Figure Q

One multiple choice question was designed which contained knowledge about the lathe operation necessary to turn a diameter to a shoulder. Theoretical variable #92 was correlated with the performance variables #16, #19, #20, #21, #22, and #24, all of which contained shoulders. Figure R is the histogram which represents this correlation. The correlations are grouped and reflect a negative correlation with the highest frequency at $-.3$.

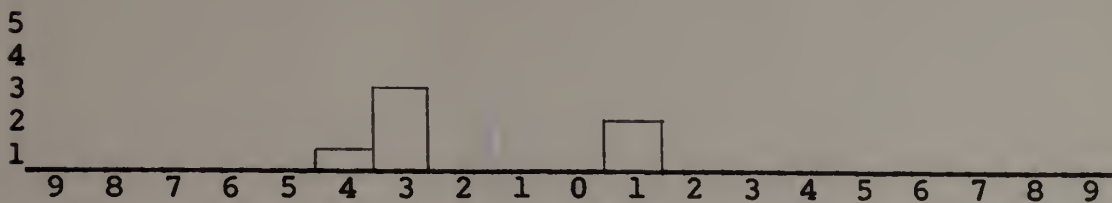


Figure R

Performance variables #17, #19, #21, and #24 are large outside diameter turning operation. The histogram below (figure S) reflects the correlation of the theoretical variables #49-#52, #54-#62, #64, #66, #67, #74, #76, #79, #91, and #99 with these performance variables. The theoretical variables represent all the multiple choice questions that contain any reference to tools, equipment or operations required to perform the large outside diameter turning.

The correlations range from -0.887 to 0.754 and the highest frequency is at $-.3$ and $.0$. This information would indicate that multiple choice questions about the tools,

equipment, and operations necessary to perform that operation are poor indicators of whether a student can perform that skill or not.

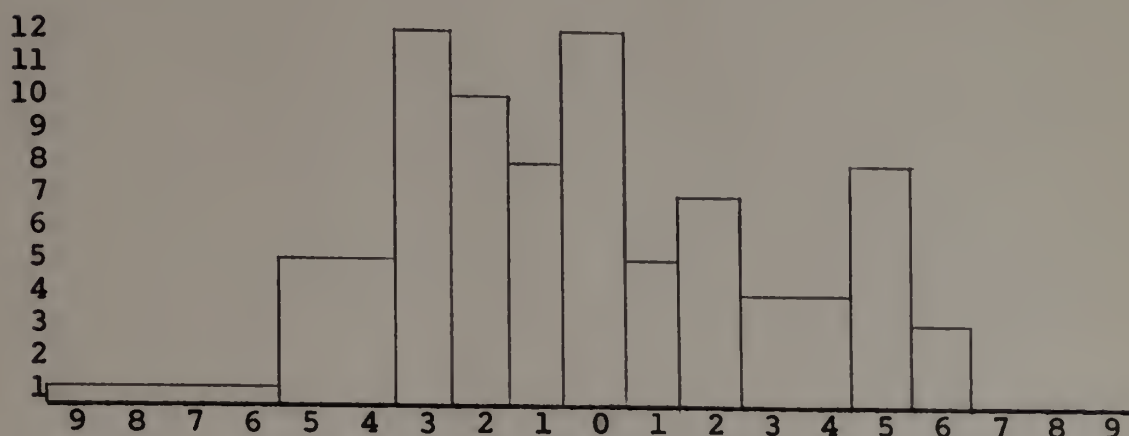


Figure S

Figure T represents large outside diameter performance variables (#17, #19, #21, and #24), and figure U represents small internal diameter performance variables (#16, #20, and #22). Both sets of variables require the use of a micrometer which is represented by theoretical variables #130-#137. Figure T has a range of correlations from -0.104 to 0.487 with the highest frequency at .3. Figure U has a range of correlations from -0.309 to 0.662 with the highest frequency at .1. The difference lies in the fact that figure U represents the performance variables which contain the diameter measurements that are the easiest to obtain with a micrometer. Figure T has performance variables requiring the use of a micrometer in a difficult way.

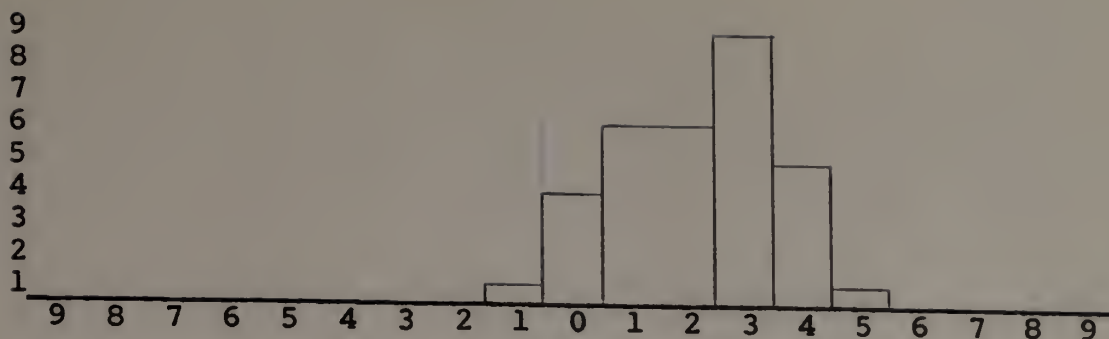


Figure T

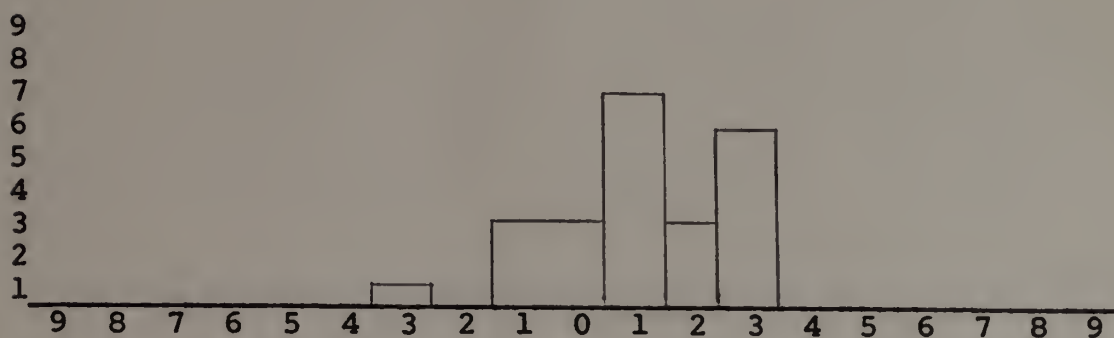


Figure U

The external and internal threading operations are represented by performance variables #15 and #23 respectively. Theoretical variables #14-#22 are identification questions about thread parts from a picture. Figure V and W represent the histograms reflecting these two sets of correlations.

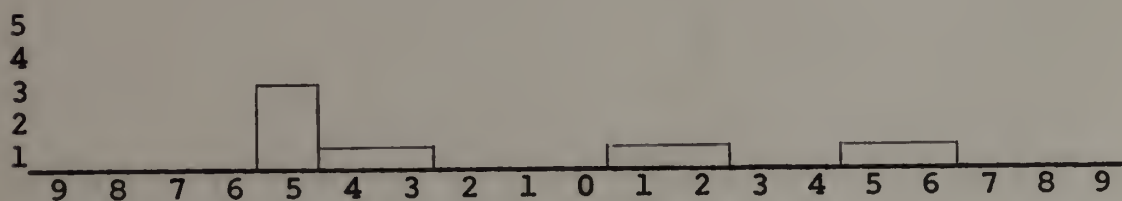


Figure V

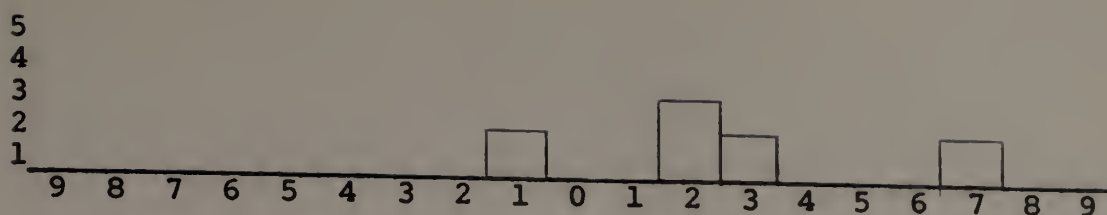


Figure W

Figure X has combined both performance variables of threading operations (#15 and #23) and reflected correlations with the theoretical variables #7-#13, which are verbal matching problems about threads.

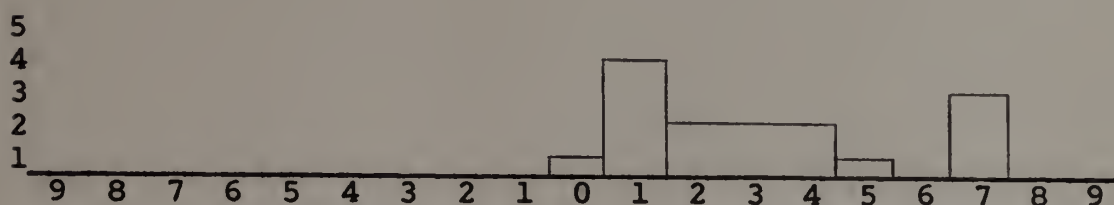


Figure X

Performance variables #18, #25, and #27 are small internal diameter operations that require the use of the cutoff tool. Figure Y is a histogram showing the correlations with the micrometer measurement problems (theoretical variables #130-#137). It shows a positive correlation peaking at a high frequency of .4. Figure Z shows the same performance variables correlated with the multiple choice questions about diameter turning and use of a cutoff tool. The correlations spread more in figure Z than figure Y with a range from -0.583 to 0.526 with the highest frequency at .1.

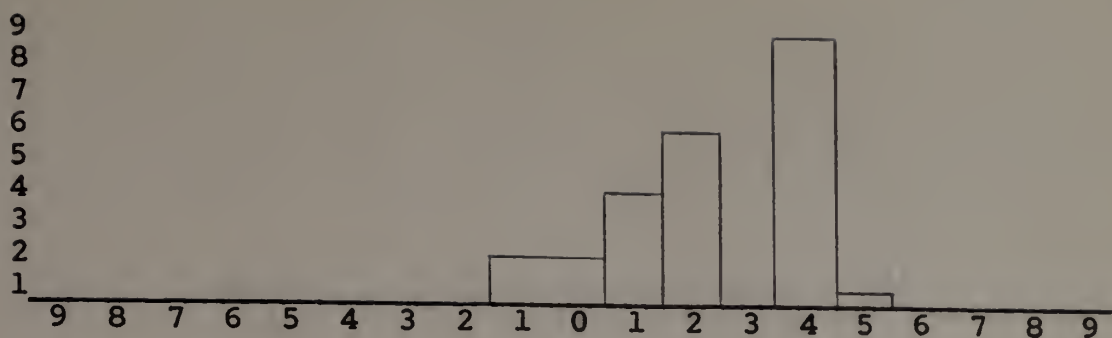


Figure Y

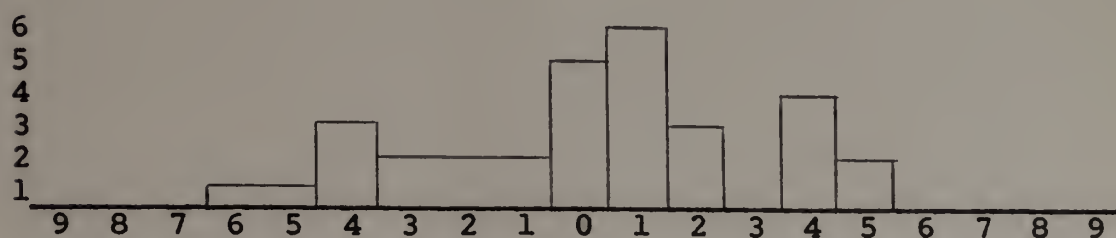


Figure Z

The micrometer measurement variables (#130-#137) were also correlated with the taper turning performance variables #26 and #28. Figure AA shows that the correlations are almost all positive with the highest frequency at .5.

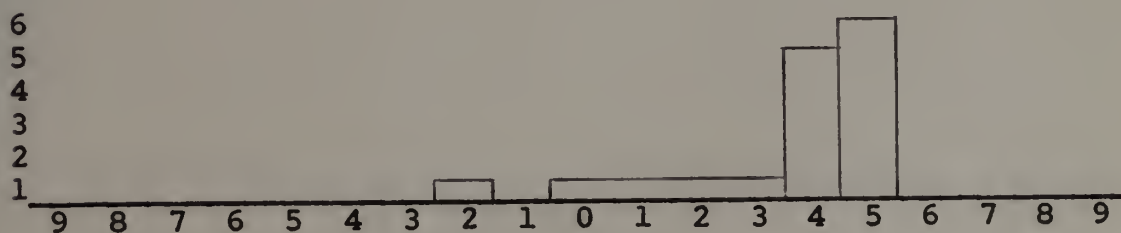


Figure AA

Performance variables #26 and #28 indicate the proficiency of an individual to a taper turning operation. Three multiple choice questions and two math problems were given (theoretical variables #59, #80, #81, #104, and #105) which reflect theoretical knowledge relating to taper turning.

Figure AB reflects the frequency distribution of the correlations of the performance variables and theoretical variables related to taper turning. The correlations vary widely and evenly from -0.602 to 0.528 . The distribution of these correlations centers near $.0$, and there are more negative correlations than positive. This information would indicate that theoretical knowledge is a poor indicator of the student's ability to turn a taper and a negative rather than a positive indicator.

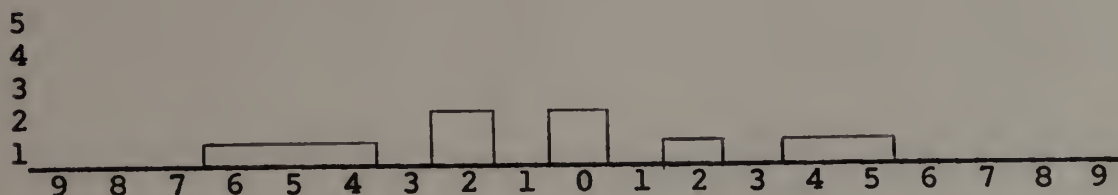


Figure AB

Biserial correlation

Historical data which included the students' chronological age in months, raw I.Q. score, and raw scores on a standardized test for mechanical reasoning and space relations was correlated with each of the 168 variables. Because

the 168 variables were dichotomous in nature and the four historical scores were continuous variables, a program to obtain a Biserial Correlation was used. The Biserial Correlation assumes that the dichotomous variable conceals a continuous distribution of attainment (from a very poor fail, to a very good pass) and that this can be adequately represented by the normal curve.

The data collected from the Biserial Correlation was not used but was collected for the purpose of allowing greater flexibility in future research based upon this study. The computer output can be found in Appendix A which contains distribution plots, division point count, and correlations themselves.

Variable frequency count

Located in Appendix C is a listing of all 165 variables in which there is a count of how many students answered a particular question right (1) and how many gave the wrong answer or were unable to do the required performance (0). Appendix C also gives the cross reference to the specific categories and corresponding test items for each variable.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The problem

In the United States there are only five states that are using occupational competency testing. These tests are largely of the paper and pencil variety with some requiring actual performance in simulated job situations. Reilly³ states ". . . it appears that trade knowledge (theory) and trade performance (practical) tests are not highly correlated and that written examinations alone are a poor indicator of trade competence." This conclusion is supported by Stuit⁴ who says: "Although it had been assumed that written tests sufficed to indicate what a man had learned in a service school, the evidence showed that performance tests and improved shop grades were not closely related with written test grades."

In Massachusetts, the instructional program directly related to a vocational trade is divided into two segments, related and shop. Written exams are frequently given in the related (theory) classroom but, other than job completion or teacher observation, there is a noticeable absence of criteria instruments and measurement techniques in the vocational shop areas. The students leave the high school with a certificate showing that they have met certification requirements in the

vocation when, in reality, they have only been evaluated on their theoretical knowledge. Their practical (manipulative) skills usually have not been systematically measured.

The focus of this study is designed as a pilot effort to determine if there was any indication to support the argument that to test a person's ability to perform a psychomotor skill by paper and pencil tests is not a valid means of indicating whether or not that person could perform that skill.

The method

Since the study is based upon two evaluative instruments, one of which was designed to measure theoretical knowledge and the other the actual performance of a psychomotor skill, the first problem to overcome was the designing of these two instruments. Performance objectives were written by the teachers involved in the study and appropriate test instruments were evolved. These instruments were administered to the ninth grade machine shop students at Diman Regional Vocational School in Fall River, Massachusetts. A correlation analysis was applied and the findings were then visually portrayed in histograms (see Chapter IV).

Hypothesis and summarized results

The acquisition of specific theoretical knowledge necessary to perform a manipulative skill does not relate to pre-determined specifications

for performance of that skill.

To find correlations of .5 to 1. would indicate that theoretical knowledge is a good indicator of a psycho-motor skill. When all correlations between the 28 performance variables and the 137 were examined only 429 out of the 3,836 were above .5. This gives very strong support to the hypothesis and when an analysis was made of the correlations that were above .5, 321 were found to be the theoretical variables that were pictorial in design. (See figures D, K, L, and O.) This left only 108 variables which had positive correlations.

Related findings

The students scored much better on the theoretical test items which were pictorial (figures K and D) than they did on the written multiple choice items (figures R and S).

In the course of conducting this study, it was discovered that the students had such low standardized test scores in reading comprehension that many of the neutral and negative correlation might have resulted from the fact that the students tested could not read or understand the written parts of the theoretical test. It was also possible that students could end up with the same results on the performance test and some students could take six hours to complete the operations while other students finished in three hours. This variation in time would have to be taken into account to relate proficiency to job efficiency. These two were probably

the major related findings I would want to take into consideration if research was again done on this hypothesis.

Conclusions and recommendations

This study was designed as a pilot effort to determine if there was any indication to support the argument that to test a person's knowledge of a psycho-motor skill is not a valid indication whether or not that person could perform that skill. Since 3,407 out of 3,836 correlations were below the .5 level, the author has come to the conclusion that he has proven through a statistical process that theoretical tests alone are invalid predictors of performance of a psycho-motor skill. The limitations of this study are considerable in that the subjects were few in number (31) and it was limited to one unit of work within one area of Vocational Education (engine lathe work for freshmen enrolled in the machine shop course).

It is recommended that a large scale research effort be done to develop new means and methods of assessing students' progress in areas of education that are concerned with the student's ability to use psycho-motor skills. Future research should answer the questions of generalizability, validity and reliability of this study's findings.

It is further recommended that legislators and leadership personnel concerned with Vocational and Technical Education be encouraged to develop means to remove the restrictive

elements of time criteria in laws governing Vocational and Technical Education Programs. That time criteria as an evaluative measure be replaced by some type of performance criteria and that evaluative procedure be developed based upon these performance criteria.

APPENDIX A

Correlation Matrix of Theoretical and Performance Variables

	1	2	3	4	5	6	7	8	9	10	11	12	13
59	-0.409	-0.434	-0.266	-0.241	0.346	0.158	0.158	-0.017	0.163	0.071	-0.017	-0.011	-0.266
60	-0.057	0.087	-0.795	0.234	0.037	-0.140	0.172	-0.136	-0.305	-0.422	-0.550	-0.715	-0.795
61	-0.409	-0.434	-0.266	-0.241	0.037	-0.140	0.172	0.487	-0.266	-0.422	-0.550	-0.715	-0.795
62	-0.113	0.209	-0.309	-0.767	-0.241	-0.434	0.158	0.139	0.409	-0.106	0.139	-0.376	0.01-
63	0.052	0.256	-0.158	0.007	0.435	-0.037	-0.037	-0.247	0.158	0.046	-0.247	0.052	0.521
64	-0.057	0.306	-0.019	0.430	0.234	0.087	0.172	0.342	0.287	0.097	0.342	-0.057	-0.019
65	-0.228	-0.217	0.047	0.139	0.338	0.227	0.220	-0.081	0.346	0.437	-0.081	0.266	0.047
66	-0.618	-0.041	0.146	-0.213	-0.213	-0.041	-0.459	-0.783	0.146	0.209	-0.309	0.266	0.146
67	-0.139	-0.247	-0.017	0.990	-0.511	-0.247	0.555	0.421	0.487	0.424	0.363	0.487	0.487
68	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
69	0.037	0.071	0.158	0.220	0.220	0.071	0.667	0.555	0.158	0.096	0.555	0.037	0.158
70	-0.087	-0.346	-0.403	-0.649	-0.046	-0.149	0.312	0.027	-0.113	-0.231	0.027	-0.087	-0.113
71	-0.229	-0.346	-0.385	-0.649	-0.046	-0.149	-0.295	-0.128	-0.365	-0.305	-0.623	0.071	0.071
72	-0.016	-0.217	-0.241	-0.271	0.338	0.007	0.220	-0.081	0.346	0.165	0.387	0.266	0.346
73	-0.363	-0.246	-0.487	-0.387	0.338	0.246	-0.555	-0.421	-0.407	-0.424	-0.878	-0.363	-0.487
74	-0.087	-0.041	-0.234	0.369	0.338	0.516	-0.459	0.309	0.146	0.209	-0.309	0.266	0.146
75	-0.016	-0.007	-0.047	-0.523	-0.338	-0.227	0.356	0.081	0.241	0.103	0.387	0.228	0.241
76	0.016	-0.642	-0.241	-0.067	-0.465	-0.217	-0.356	-0.081	0.762	0.596	-0.511	-0.667	-0.762
77	-0.139	0.247	0.017	0.081	0.081	0.247	0.355	-0.878	0.017	0.080	-0.421	0.139	0.017
78	-0.459	-0.087	-0.287	-0.430	-0.430	-0.306	-0.172	-0.342	-0.287	-0.097	-0.342	-0.139	-0.287
79	-0.335	-0.651	0.158	-0.435	-0.435	-0.256	-0.071	0.247	-0.521	0.253	-0.246	0.209	0.158
80	0.228	-0.046	0.178	0.409	0.067	0.217	0.356	0.081	0.047	0.103	0.081	0.426	0.241
81	-0.229	0.090	0.332	-0.098	-0.237	-0.443	-0.295	-0.128	0.332	0.228	0.081	0.376	-0.578
82	-0.515	-0.435	-0.346	-0.139	-0.067	-0.007	0.356	0.081	-0.047	0.206	0.698	0.376	0.568
83	0.113	0.335	-0.409	0.016	0.016	0.335	0.037	0.363	0.309	0.990	0.990	0.990	0.990
84	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
85	0.392	0.220	-0.248	0.384	0.384	0.220	0.373	0.213	0.248	-0.309	0.213	-0.304	-0.248
86	0.299	-0.087	0.565	0.387	-0.027	0.140	0.400	0.136	0.019	0.172	0.136	0.209	0.305
87	-0.092	0.220	-0.248	-0.087	0.384	-0.266	0.373	0.213	0.248	-0.309	0.213	-0.304	-0.248
88	0.163	-0.158	-0.163	-0.241	-0.312	-0.158	0.656	0.770	-0.266	-0.342	-0.017	0.309	0.480
89	0.109	0.087	-0.305	0.027	-0.183	-0.140	0.172	-0.134	0.613	0.379	0.342	0.057	-0.109
90	0.198	0.087	-0.305	0.027	-0.183	-0.140	0.172	-0.134	0.613	0.379	0.342	0.057	-0.109
91	0.459	0.217	0.241	0.465	0.067	0.436	0.356	0.081	-0.047	-0.165	0.081	0.228	0.512
92	-0.011	-0.158	0.163	-0.241	-0.241	-0.158	0.158	-0.017	0.163	0.071	0.487	-0.011	0.163
93	0.191	0.209	0.565	0.228	0.228	0.443	-0.037	0.139	0.409	0.479	0.139	0.056	0.565
94	-0.027	0.007	-0.232	-0.113	-0.356	-0.141	-0.528	-0.305	-0.500	-0.389	-0.305	-0.707	-0.718
95	0.266	0.007	0.654	-0.067	-0.067	0.007	0.220	0.337	0.346	0.437	-0.081	0.515	0.346
96	0.127	0.385	-0.087	-0.305	0.158	0.291	0.123	0.295	0.569	0.318	-0.191	-0.131	-0.087
97	0.396	0.291	0.459	0.356	0.305	0.291	0.312	0.027	0.459	0.545	0.471	0.396	0.667
98	0.209	0.256	0.158	-0.227	-0.227	-0.037	-0.071	-0.246	0.434	0.315	0.625	0.443	0.342
99	0.206	0.253	0.071	0.338	0.359	-0.046	0.096	-0.080	-0.742	-0.415	0.424	0.779	-0.342
100	-0.707	-0.141	-0.232	0.113	-0.121	0.113	0.018	-0.305	0.087	0.183	-0.305	0.266	0.097
101	-0.376	0.209	0.011	-0.016	-0.016	0.209	-0.571	-0.698	0.011	-0.206	0.139	0.191	0.409
102	-0.198	0.590	0.019	0.884	0.747	0.846	0.172	0.342	0.237	-0.097	0.550	0.389	0.305
103	0.092	-0.022	0.028	-0.384	0.087	-0.461	-0.373	-0.213	-0.000	-0.459	-0.213	-0.738	-0.528
104	0.515	0.315	-0.071	-0.596	0.523	0.455	-0.356	-0.081	0.762	-0.809	-0.081	-0.228	0.047
105	0.106	0.071	0.158	0.220	0.220	0.071	-0.096	-0.424	0.342	0.158	0.555	0.342	0.342
106	0.571	0.071	0.158	0.220	0.220	0.071	0.667	0.555	0.158	0.096	0.555	0.337	0.158
107	0.571	0.071	0.158	0.220	0.220	0.071	0.667	0.555	0.158	0.096	0.555	0.337	0.158
108	0.571	0.071	0.158	0.220	0.220	0.071	0.667	0.555	0.158	0.096	0.555	0.337	0.158
109	0.571	0.071	0.158	0.220	0.220	0.071	0.667	0.555	0.158	0.096	0.555	0.337	0.158
110	0.571	0.071	0.158	0.220	0.220	0.071	0.667	0.555	0.158	0.096	0.555	0.337	0.158
111	0.571	0.071	0.158	0.220	0.220	0.071	0.667	0.555	0.158	0.096	0.555	0.337	0.158
112	0.571	0.071	0.158	0.220	0.220	0.071	0.667	0.555	0.158	0.096	0.555	0.337	0.158
113	0.571	0.071	0.158	0.220	0.220	0.071	0.667	0.555	0.158	0.096	0.555	0.337	0.158
114	0.571	0.071	0.158	0.220	0.220	0.071	0.667	0.555	0.158	0.096	0.555	0.337	0.158
115	0.571	0.071	0.158	0.220	0.220	0.071	0.667	0.555	0.158	0.096	0.555	0.337	0.158
116	0.571	0.071	0.158	0.220	0.220	0.071	0.667	0.555	0.158	0.096	0.555	0.337	0.158

1	14	15	16	17	18	19	20	21	22	23	24	25	26
1	-0.399	-0.409	-0.325	-0.539	-0.266	-0.139	-0.052	-0.106	0.087	-0.443	0.087	9.990	0.037
2	0.29A	0.158	-0.268	0.052	-0.516	-0.247	-0.023	-0.04A	0.363	-0.826	0.041	9.990	-0.486
3	-0.569	0.480	0.578	-0.409	0.234	-0.017	0.434	0.391	0.113	-0.071	-0.146	9.990	0.158
4	0.305	0.047	-0.409	0.016	0.213	-0.081	0.217	0.709	0.440	-0.629	0.213	9.990	-0.356
5	0.509	0.047	-0.237	0.266	-0.213	-0.081	-0.007	0.437	0.440	-0.743	0.213	9.990	-0.486
6	0.298	0.646	0.443	0.052	0.041	-0.247	0.475	0.585	0.562	-0.744	0.041	9.990	0.697
7	-0.123	0.158	0.699	0.037	0.835	0.555	-0.071	0.09A	-0.312	-0.295	0.459	9.990	0.555
8	-0.295	-0.017	0.553	0.139	0.783	0.421	-0.246	-0.080	-0.471	0.128	0.309	9.990	0.158
9	-0.224	0.163	0.266	-0.409	0.234	0.770	0.158	0.639	0.113	-0.332	-0.146	9.990	0.096
10	-0.318	0.391	0.500	-0.479	0.662	0.734	0.315	0.749	0.231	-0.151	-0.209	9.990	0.555
11	0.588	-0.017	0.052	0.363	0.609	0.878	0.247	0.734	0.430	0.128	0.309	9.990	0.537
12	-0.127	0.770	0.910	-0.191	0.413	0.363	0.443	0.206	0.332	-0.223	-0.266	9.990	0.158
13	0.087	0.480	0.796	-0.011	0.234	0.487	0.434	0.071	0.113	-0.332	-0.146	9.990	0.443
14	1.000	-0.569	-0.495	0.925	-0.415	0.191	0.170	0.247	0.572	-0.401	-0.101	9.990	0.158
15	-0.569	1.000	0.796	-0.409	0.712	-0.017	0.667	0.071	0.692	-0.071	0.234	9.990	0.571
16	-0.495	0.796	1.000	-0.325	0.762	0.032	0.288	0.256	-0.031	0.019	-0.077	9.990	0.459
17	0.925	-0.409	-0.325	1.000	0.266	-0.139	0.209	0.206	0.332	-0.223	0.087	9.990	0.555
18	-0.415	0.712	0.762	-0.266	1.000	0.309	0.516	0.662	0.266	0.409	0.633	9.990	-0.071
19	0.191	-0.017	0.052	-0.139	0.309	1.000	0.247	0.734	-0.027	-0.346	-0.041	9.990	0.096
20	0.170	0.667	0.288	0.209	0.516	0.247	1.000	0.549	0.651	-0.346	0.158	9.990	-0.312
21	0.242	0.071	-0.256	0.206	0.662	0.734	0.549	1.000	0.492	-0.151	0.266	9.990	0.835
22	0.572	0.692	-0.031	0.332	0.266	-0.027	0.691	0.492	1.000	-0.588	0.409	9.990	0.123
23	-0.401	-0.019	-0.077	-0.223	0.019	0.128	-0.346	-0.151	-0.588	1.000	0.409	9.990	-0.018
24	-0.101	0.234	-0.077	-0.087	0.633	0.309	0.990	0.158	0.266	0.409	1.000	9.990	0.613
25	0.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	-0.016
26	0.443	0.158	0.224	0.571	0.459	0.555	-0.071	0.096	-0.312	0.743	0.835	9.990	0.312
27	-0.295	0.224	0.113	-0.131	0.415	0.295	0.060	0.630	0.041	0.401	0.415	9.990	0.667
28	-0.471	-0.087	-0.387	-0.592	0.021	0.662	0.113	0.389	-0.037	0.505	0.565	9.990	0.555
29	0.191	0.487	0.553	0.363	0.309	0.421	-0.246	-0.080	-0.471	0.623	0.783	9.990	0.224
30	-0.027	0.071	-0.459	-0.479	0.158	0.424	0.315	0.294	-0.034	0.305	0.662	9.990	0.224
31	0.031	0.232	0.024	0.027	0.585	0.305	0.346	0.389	-0.037	-0.491	0.021	9.990	0.224
32	-0.252	0.403	-0.031	0.087	0.266	-0.027	-0.149	0.231	0.032	0.217	0.266	9.990	0.224
33	0.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	-0.486
34	-0.123	0.158	0.224	0.037	0.835	0.555	0.486	-0.096	-0.266	-0.295	-0.459	9.990	0.667
35	-0.191	0.656	0.052	-0.363	0.783	0.421	0.623	0.734	0.266	0.295	0.835	9.990	0.555
36	0.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	0.224
37	0.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	0.224
38	-0.170	0.158	0.046	0.052	0.041	-0.247	-0.256	-0.315	-0.291	-0.090	0.041	9.990	0.224
39	-0.123	0.158	0.224	0.037	0.459	0.555	-0.071	0.096	0.266	0.295	0.835	9.990	0.224
40	-0.305	0.241	0.094	-0.515	0.213	0.081	0.007	0.103	-0.046	-0.500	0.309	9.990	0.224
41	-0.295	-0.017	0.052	-0.139	0.309	0.553	-0.443	0.179	-0.031	0.019	0.317	9.990	0.224
42	-0.495	-0.403	-0.339	-0.325	-0.077	0.553	-0.443	0.179	-0.031	0.019	0.317	9.990	0.224
43	-0.495	-0.178	-0.087	-0.325	-0.077	0.553	-0.443	0.179	-0.031	0.019	0.317	9.990	0.224
44	-0.495	-0.178	-0.087	-0.325	-0.077	0.553	-0.443	0.179	-0.031	0.019	0.317	9.990	0.224
45	-0.495	-0.178	-0.087	-0.325	-0.077	0.553	-0.443	0.179	-0.031	0.019	0.317	9.990	0.224
46	-0.495	-0.178	-0.087	-0.325	-0.077	0.553	-0.443	0.179	-0.031	0.019	0.317	9.990	0.224
47	-0.401	-0.332	-0.266	-0.223	-0.077	0.553	-0.443	0.179	-0.031	0.019	0.317	9.990	0.224
48	-0.369	0.464	0.178	-0.309	0.146	-0.487	0.521	-0.071	0.459	0.071	0.146	9.990	-0.486
49	-0.369	0.464	0.178	-0.309	0.146	-0.487	0.521	-0.071	0.459	0.071	0.146	9.990	-0.486
50	-0.524	-0.241	-0.409	-0.667	0.241	0.387	0.217	0.155	-0.158	-0.274	0.213	9.990	-0.486
51	-0.131	0.565	0.325	-0.113	0.266	0.139	0.335	0.479	0.396	-0.229	0.266	9.990	0.528
52	0.031	-0.087	-0.387	-0.266	0.021	-0.194	-0.141	-0.183	0.194	0.505	0.365	9.990	0.096
53	-0.027	0.542	0.179	-0.106	0.158	0.424	-0.585	-0.022	-0.034	-0.390	0.158	9.990	-0.266
54	-0.370	-0.493	-0.295	-0.332	-0.266	0.027	0.291	0.084	-0.528	-0.158	0.409	9.990	0.295
55	-0.025	-0.332	-0.266	-0.223	0.000	0.128	-0.046	-0.390	0.158	0.571	0.409	9.990	-0.224
56	-0.495	-0.403	-0.087	-0.325	-0.077	0.553	-0.443	0.179	-0.031	0.019	-0.077	9.990	-0.443
57	-0.079	0.682	0.495	-0.131	-0.101	-0.191	0.535	0.027	0.452	-0.025	-0.101	9.990	-0.443
58	0.295	-0.569	0.223	0.131	-0.101	0.191	-0.298	-0.316	-0.252	0.025	-0.415	9.990	-0.123

59	0.369	0.163	0.266	0.309	-0.146	0.407	0.158	0.071	0.403	-0.332	-0.146	9.990	0.158
60	0.227	-0.305	-0.464	0.198	0.158	-0.134	-0.306	-0.172	0.348	-0.332	0.158	9.990	-0.400
61	0.224	-0.266	0.266	-0.011	-0.146	-0.017	-0.158	-0.342	-0.459	0.385	-0.146	9.990	0.158
62	0.127	-0.309	-0.082	0.191	-0.087	0.139	-0.209	0.479	-0.087	-0.229	0.266	9.990	-0.037
63	0.060	0.158	0.046	0.052	0.041	-0.247	-0.256	-0.046	-0.071	-0.090	0.369	9.990	0.071
64	0.007	-0.019	-0.158	-0.057	0.150	-0.136	-0.087	0.379	0.147	-0.332	-0.418	9.990	-0.400
65	0.091	0.241	0.586	-0.016	0.213	0.387	0.436	0.437	0.248	-0.274	-0.369	9.990	-0.356
66	0.415	0.146	0.077	0.266	-0.189	-0.309	0.369	0.209	0.318	0.000	-0.633	9.990	-0.459
67	0.191	0.487	0.052	0.363	0.309	0.421	0.247	-0.080	0.027	0.623	0.783	9.990	0.885
68	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990
69	0.123	0.656	0.224	0.037	0.835	0.555	0.486	0.613	0.266	0.295	0.835	9.990	0.667
70	-0.172	-0.113	0.031	-0.087	0.318	-0.430	-0.291	-0.231	0.052	0.588	0.577	9.990	0.312
71	-0.707	0.332	0.266	-0.165	0.000	-0.128	-0.090	-0.651	-0.545	0.191	0.000	9.990	-0.295
72	0.509	-0.512	0.237	0.266	-0.369	-0.081	-0.227	-0.103	-0.158	0.500	-0.369	9.990	0.220
73	-0.191	-0.487	0.077	-0.363	-0.783	-0.421	-0.247	0.734	-0.430	-0.128	-0.783	9.990	-0.555
74	0.415	0.146	0.077	-0.363	-0.189	-0.309	0.369	0.209	0.577	-0.409	-0.189	9.990	-0.459
75	-0.500	-0.047	0.409	-0.515	-0.213	0.081	-0.217	-0.709	-0.440	-0.098	-0.500	9.990	-0.220
76	0.091	0.047	-0.409	-0.016	0.213	-0.081	-0.007	0.103	0.406	0.500	0.500	9.990	-0.555
77	-0.191	0.017	-0.052	-0.363	-0.309	-0.421	0.246	0.080	0.471	-0.128	-0.309	9.990	0.400
78	-0.007	0.305	-0.176	-0.299	-0.418	0.136	0.306	-0.097	0.060	0.332	0.648	9.990	0.486
79	-0.535	0.434	0.288	-0.539	-0.041	-0.246	-0.007	0.585	-0.363	0.826	-0.041	9.990	-0.220
80	-0.091	0.241	0.094	-0.266	0.613	-0.387	0.007	0.103	-0.158	0.274	0.317	9.990	-0.224
81	-0.223	-0.578	-0.363	-0.426	-0.317	-0.052	-0.807	-0.179	-0.628	0.266	-0.815	9.990	-0.295
82	0.401	0.071	0.266	0.223	-0.409	-0.128	0.007	0.151	-0.158	-0.124	0.815	9.990	0.356
83	0.124	-0.047	0.409	0.228	-0.613	-0.387	0.007	0.103	0.158	0.629	0.613	9.990	0.037
84	0.131	-0.409	-0.325	-0.191	-0.266	0.363	-0.052	-0.106	0.087	-0.223	0.087	9.990	0.990
85	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	0.373
86	-0.206	-0.248	-0.181	0.392	0.087	0.213	-0.220	0.019	0.029	-0.104	0.087	9.990	0.172
87	-0.443	0.305	0.464	-0.720	0.648	0.134	-0.140	0.172	0.060	-0.037	-0.158	9.990	-0.373
88	0.206	-0.248	-0.181	0.392	0.087	0.213	-0.461	0.517	-0.029	0.251	0.512	9.990	0.158
89	-0.224	0.163	0.578	-0.011	0.734	-0.017	0.434	-0.087	0.348	-0.332	-0.146	9.990	-0.400
90	0.007	-0.305	-0.464	-0.299	-0.158	0.342	-0.087	0.097	0.158	-0.332	0.158	9.990	0.356
91	-0.305	0.512	0.094	-0.016	0.369	-0.387	0.227	0.163	0.387	-0.500	0.413	9.990	0.158
92	0.369	-0.266	-0.403	0.309	-0.146	-0.017	0.158	0.071	0.403	-0.071	-0.146	9.990	-0.571
93	-0.131	0.565	0.509	-0.113	0.266	-0.363	0.639	0.479	0.396	-0.229	0.087	9.990	0.018
94	0.217	-0.232	-0.840	0.266	-0.021	-0.662	-0.113	0.123	0.037	0.491	0.319	9.990	-0.356
95	-0.692	-0.654	0.586	-0.459	0.500	-0.081	-0.007	0.165	0.046	-0.629	-0.369	9.990	-0.123
96	-0.295	-0.087	-0.223	0.127	0.101	-0.191	-0.170	0.027	-0.172	-0.389	0.415	9.990	-0.266
97	0.252	0.177	0.031	-0.087	0.318	0.625	0.363	0.034	0.615	-0.158	-0.266	9.990	0.486
98	-0.060	0.158	-0.459	-0.335	-0.369	0.625	-0.223	0.046	0.149	0.447	-0.441	9.990	0.596
99	0.242	-0.342	0.158	0.206	-0.158	-0.080	-0.253	-0.415	-0.034	0.305	-0.209	9.990	0.018
100	0.217	0.468	0.387	0.592	0.319	0.139	0.335	0.183	0.266	0.287	0.319	9.990	-0.571
101	0.127	0.409	-0.098	0.191	-0.613	-0.136	0.306	0.422	0.158	-0.229	-0.613	9.990	-0.172
102	0.127	0.305	0.158	0.299	0.18	0.139	0.335	0.104	0.266	-0.251	-0.158	9.990	-0.373
103	0.305	-0.820	-0.602	0.364	-0.512	-0.511	-0.435	0.109	0.029	-0.251	-0.213	9.990	-0.356
104	0.124	-0.071	-0.094	-0.228	-0.369	-0.424	-0.253	0.103	0.158	-0.274	-0.158	9.990	-0.096
105	0.124	0.158	0.256	0.106	-0.459	0.555	-0.071	0.096	0.266	0.151	0.835	9.990	0.667
106	-0.123	0.158	0.224	0.037	0.459	0.555	-0.071	0.096	0.266	0.295	0.835	9.990	0.667
107	-0.123	0.158	0.224	0.037	0.459	0.555	-0.071	0.096	0.266	0.295	0.835	9.990	0.667
108	-0.123	0.158	0.224	0.037	0.459	0.555	-0.071	0.096	0.266	0.295	0.835	9.990	0.667
109	-0.123	0.158	0.224	0.037	0.459	0.555	-0.071	0.096	0.266	0.295	0.835	9.990	0.667
110	-0.123	0.158	0.224	0.037	0.459	0.555	-0.071	0.096	0.266	0.295	0.835	9.990	0.667
111	-0.123	0.158	0.224	0.037	0.459	0.555	-0.071	0.096	0.266	0.295	0.835	9.990	0.667
112	-0.123	0.158	0.224	0.037	0.459	0.555	-0.071	0.096	0.266	0.295	0.835	9.990	0.667
113	-0.123	0.158	0.224	0.037	0.459	0.555	-0.071	0.096	0.266	0.295	0.835	9.990	0.667
114	-0.295	-0.017	0.052	-0.139	0.309	0.421	-0.247	-0.080	-0.027	0.623	-0.783	9.990	0.555
115	-0.295	-0.017	0.052	-0.139	0.309	0.421	-0.247	-0.080	-0.027	0.623	-0.783	9.990	0.555
116	-0.278	-0.248	-0.181	-0.364	0.087	0.699	-0.461	-0.019	-0.029	0.251	0.512	9.990	0.373

1	27	28	29	30	31	32	33	34	35	36	37	38	39
1	-0.131	0.027	-0.139	0.206	-0.592	-0.396	9.990	-0.571	0.037	-0.139	9.990	0.052	0.571
2	-0.298	-0.553	-0.247	0.253	0.141	-0.071	9.990	-0.071	0.071	-0.247	9.990	-0.223	0.071
3	-0.087	0.468	0.487	0.071	-0.087	-0.071	9.990	-0.556	0.158	-0.017	9.990	-0.158	0.158
4	-0.091	-0.113	-0.081	-0.103	0.121	-0.158	9.990	-0.220	0.220	0.387	9.990	-0.436	0.220
5	-0.091	-0.113	-0.081	-0.103	0.356	0.046	9.990	0.356	0.220	0.387	9.990	-0.217	0.220
6	-0.060	-0.113	-0.247	-0.046	0.141	-0.071	9.990	0.486	0.071	0.246	9.990	-0.223	0.071
7	0.123	0.018	0.555	0.096	0.520	0.266	9.990	-0.667	0.667	0.555	9.990	0.071	0.667
8	-0.131	-0.194	0.421	-0.080	0.662	0.430	9.990	-0.555	0.555	0.421	9.990	0.246	0.555
9	0.224	-0.087	-0.017	0.391	0.500	0.692	9.990	-0.158	0.158	-0.017	9.990	-0.158	0.158
10	0.318	-0.183	-0.080	0.294	0.389	0.492	9.990	-0.096	0.096	0.080	9.990	-0.315	0.096
11	-0.191	0.305	0.421	0.106	0.305	-0.027	9.990	-0.555	0.555	0.421	9.990	0.247	0.555
12	-0.131	-0.266	0.363	-0.106	0.290	0.097	9.990	-0.037	0.037	-0.139	9.990	0.052	0.037
13	-0.359	-0.007	0.887	0.071	0.500	0.113	9.990	-0.158	0.158	-0.017	9.990	0.521	0.158
14	-0.295	-0.471	0.191	-0.027	0.031	-0.252	9.990	0.123	0.123	0.191	9.990	-0.170	-0.123
15	0.224	-0.087	0.487	0.071	0.232	0.403	9.990	-0.158	0.656	0.487	9.990	0.158	0.158
16	0.113	-0.387	0.553	-0.459	0.024	-0.031	9.990	-0.224	0.037	0.052	9.990	0.046	0.037
17	-0.131	-0.592	0.363	-0.479	0.027	0.087	9.990	-0.037	0.037	0.363	9.990	0.052	0.037
18	0.415	0.021	0.309	0.158	0.565	0.266	9.990	-0.459	0.835	0.783	9.990	-0.041	0.459
19	0.295	0.662	0.421	0.424	0.305	-0.027	9.990	-0.555	0.555	0.421	9.990	-0.247	0.555
20	0.060	0.113	-0.246	0.315	0.346	-0.149	9.990	-0.486	0.486	0.625	9.990	-0.256	-0.071
21	0.630	0.389	-0.080	0.294	0.389	0.231	9.990	-0.096	0.613	0.734	9.990	-0.315	0.096
22	0.041	-0.037	-0.471	-0.034	-0.037	-0.052	9.990	-0.266	0.266	0.430	9.990	-0.291	0.266
23	0.401	0.505	0.623	0.305	-0.491	-0.217	9.990	-0.295	0.295	0.128	9.990	0.090	0.295
24	0.415	0.565	0.783	0.662	0.021	0.234	9.990	-0.459	0.835	0.783	9.990	0.041	0.835
25	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990
26	0.123	-0.018	0.885	0.613	-0.018	-0.312	9.990	-0.667	0.667	0.555	9.990	-0.486	0.667
27	1.000	0.726	-0.191	0.318	-0.031	0.252	9.990	0.441	0.123	0.295	9.990	-0.060	0.123
28	0.726	1.000	-0.194	0.123	-0.060	0.194	9.990	-0.555	0.528	0.662	9.990	0.687	0.528
29	-0.191	-0.194	1.000	0.424	0.305	-0.027	9.990	-0.555	0.555	0.421	9.990	-0.247	0.555
30	0.318	0.123	0.424	1.000	0.389	-0.034	9.990	-0.096	0.613	0.424	9.990	0.409	0.096
31	0.031	-0.060	0.305	0.389	1.000	0.826	9.990	0.312	0.528	0.662	9.990	0.738	0.266
32	0.252	0.194	-0.027	0.034	0.826	1.000	1.000	9.990	9.990	9.990	9.990	9.990	9.990
33	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990
34	0.443	0.018	-0.555	-0.066	0.018	0.312	9.990	1.000	1.000	0.885	9.990	0.171	0.667
35	0.123	0.528	0.555	0.613	0.528	0.266	9.990	-0.555	0.885	1.000	9.990	0.1246	0.555
36	0.295	0.662	0.421	0.424	0.662	0.430	9.990	-0.555	9.990	9.990	9.990	9.990	9.990
37	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990
38	-0.060	0.687	-0.247	-0.046	0.409	0.738	9.990	0.486	0.071	0.246	9.990	1.000	0.071
39	0.123	0.528	0.555	0.596	-0.018	0.266	9.990	-0.667	0.667	0.555	9.990	0.071	0.555
40	-0.124	0.113	0.081	0.596	0.337	0.356	9.990	0.220	0.356	0.081	9.990	0.436	0.356
41	-0.588	0.305	0.421	-0.080	0.305	-0.027	9.990	-0.555	0.555	0.421	9.990	0.443	0.555
42	-0.223	0.356	0.553	-0.459	-0.387	0.628	9.990	-0.699	0.224	0.052	9.990	0.443	0.699
43	-0.223	0.356	0.553	-0.459	-0.387	0.628	9.990	-0.699	0.224	0.052	9.990	0.443	0.699
44	-0.223	0.356	0.553	-0.459	-0.387	0.628	9.990	-0.699	0.224	0.052	9.990	0.443	0.699
45	-0.223	0.356	0.553	-0.459	-0.387	0.628	9.990	-0.699	0.224	0.052	9.990	0.443	0.699
46	-0.223	0.356	0.553	-0.459	-0.387	0.628	9.990	-0.699	0.224	0.052	9.990	0.443	0.699
47	-0.223	0.356	0.553	-0.459	-0.387	0.628	9.990	-0.699	0.224	0.052	9.990	0.443	0.699
48	0.369	0.087	-0.017	0.342	0.468	0.459	9.990	0.158	-0.158	0.017	9.990	0.158	-0.158
49	0.369	0.087	-0.017	0.342	0.468	0.459	9.990	0.158	-0.158	0.017	9.990	0.158	-0.158
50	-0.091	0.582	-0.081	-0.071	0.165	0.177	9.990	-0.220	0.220	0.387	9.990	0.227	-0.220
51	0.761	0.266	0.139	0.479	0.266	0.158	9.990	0.571	-0.037	0.139	9.990	-0.333	-0.571
52	0.217	0.198	0.305	0.123	-0.341	-0.266	9.990	-0.018	-0.018	0.305	9.990	-0.315	0.018
53	0.027	-0.183	0.424	-0.424	-0.183	-0.034	9.990	-0.096	0.096	0.080	9.990	-0.140	0.096
54	-0.027	0.266	0.027	-0.492	-0.194	-0.150	9.990	-0.295	0.312	0.027	9.990	-0.090	0.295
55	-0.389	0.536	0.128	-0.151	-0.491	-0.217	9.990	-0.295	0.224	0.128	9.990	0.046	0.295
56	0.113	0.356	0.052	-0.256	-0.554	-0.353	9.990	-0.699	0.224	0.052	9.990	0.170	-0.223
57	0.079	0.471	-0.191	-0.242	-0.266	-0.172	9.990	-0.443	-0.123	0.295	9.990	0.060	-0.443
58	-0.079	0.031	-0.295	-0.027	-0.217	-0.041	9.990	0.123	-0.123	-0.295	9.990	0.060	-0.123

59	-0.087	0.232	-0.017	-0.517	-0.067	0.113	9.990	-0.158	0.158	9.990	0.497	-0.158	0.158	39
60	-0.007	0.288	-0.550	-0.422	-0.189	0.147	9.990	-0.112	0.172	9.990	0.342	0.087	0.172	
61	-0.087	0.232	-0.017	-0.342	-0.087	0.113	9.990	-0.158	0.158	9.990	0.487	0.521	0.158	
62	-0.127	0.027	0.139	0.779	0.694	0.618	9.990	0.037	0.037	9.990	0.139	0.209	-0.027	
63	-0.060	-0.113	0.246	0.253	-0.113	0.149	9.990	0.486	0.071	9.990	-0.247	0.256	0.071	
64	0.209	0.046	-0.136	0.097	0.528	0.348	9.990	-0.172	0.172	9.990	0.342	0.087	-0.400	
65	0.332	0.121	-0.511	-0.596	-0.113	0.158	9.990	-0.220	-0.356	9.990	-0.081	-0.642	0.220	
66	0.468	0.021	-0.309	-0.021	-0.021	-0.266	9.990	0.459	-0.459	9.990	-0.309	-0.041	-0.835	
67	-0.191	-0.194	0.878	0.734	0.305	-0.027	9.990	0.555	0.555	9.990	0.421	0.247	0.555	
68	0.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	
69	0.123	0.528	0.555	0.613	0.528	0.266	9.990	-0.667	1.000	9.990	0.885	0.071	0.667	
70	0.379	0.682	0.027	-0.231	-0.421	0.052	9.990	0.266	0.312	9.990	0.471	0.071	0.312	
71	0.025	0.287	-0.128	0.151	-0.158	0.158	9.990	0.295	-0.295	9.990	-0.623	0.447	-0.295	
72	0.124	0.356	-0.081	0.165	0.121	0.046	9.990	0.358	0.356	9.990	-0.081	0.071	-0.356	
73	0.191	-0.305	-0.421	-0.424	-0.305	-0.430	9.990	0.555	-0.885	9.990	-0.878	0.246	-0.555	
74	-0.101	-0.021	-0.309	-0.158	0.319	0.577	9.990	0.459	-0.459	9.990	-0.309	-0.041	-0.459	
75	-0.124	0.113	-0.387	-0.437	-0.356	0.577	9.990	-0.356	-0.220	9.990	0.387	0.217	0.220	
76	0.124	0.582	-0.081	0.165	-0.337	-0.158	9.990	0.356	0.356	9.990	0.387	0.435	0.220	
77	0.588	0.194	-0.421	0.080	-0.622	-0.430	9.990	0.555	-0.555	9.990	-0.421	-0.246	-0.555	
78	0.443	-0.046	0.136	0.172	-0.288	0.060	9.990	0.112	0.400	9.990	0.136	0.140	0.400	
79	-0.170	0.113	0.625	0.315	-0.141	-0.149	9.990	0.220	-0.071	9.990	-0.246	0.223	-0.071	
80	-0.124	0.113	-0.387	0.359	0.113	0.158	9.990	0.220	0.356	9.990	0.511	0.836	0.220	
81	0.223	-0.024	-0.052	-0.179	-0.024	0.353	9.990	0.224	-0.699	9.990	-0.553	0.046	-0.224	
82	0.389	0.505	-0.128	0.151	0.287	0.217	9.990	0.220	0.743	9.990	0.623	0.090	-0.743	
83	-0.091	0.113	0.081	-0.437	-0.356	-0.046	9.990	0.220	0.356	9.990	0.511	0.227	0.356	
84	-0.370	0.290	-0.139	-0.106	0.027	0.087	9.990	-0.037	0.037	9.990	-0.139	0.335	0.571	
85	0.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	
86	0.278	0.328	0.213	-0.309	0.328	-0.029	9.990	-0.373	0.373	9.990	0.699	0.220	0.373	
87	0.007	0.189	0.136	-0.097	-0.288	-0.147	9.990	-0.400	0.400	9.990	0.136	0.140	-0.172	
88	-0.206	0.328	0.213	-0.309	0.328	0.433	9.990	-0.373	0.373	9.990	0.213	0.461	0.768	
89	-0.087	-0.087	-0.017	-0.517	-0.087	-0.177	9.990	-0.656	0.158	9.990	-0.017	0.521	0.158	
90	-0.227	0.528	-0.550	0.097	0.466	0.147	9.990	-0.172	0.172	9.990	0.342	0.306	0.172	
91	0.091	0.113	0.511	-0.165	0.113	0.158	9.990	-0.356	0.356	9.990	0.511	0.217	0.356	
92	-0.369	-0.087	-0.017	0.071	-0.087	0.113	9.990	-0.158	0.158	9.990	0.487	0.158	0.158	
93	-0.127	-0.027	-0.363	0.479	0.592	0.396	9.990	0.037	0.037	9.990	0.139	0.443	-0.037	
94	0.031	0.060	-0.305	0.535	0.000	0.266	9.990	0.528	0.018	9.990	0.194	0.346	0.018	
95	0.124	-0.113	-0.081	-0.359	0.356	0.248	9.990	-0.220	0.220	9.990	0.387	0.227	-0.356	
96	0.295	-0.266	-0.191	0.027	-0.031	0.252	9.990	-0.133	0.123	9.990	-0.191	0.170	0.123	
97	-0.041	0.194	-0.430	0.034	0.266	0.253	9.990	0.312	-0.266	9.990	-0.430	0.071	0.312	
98	-0.170	0.553	0.625	0.549	-0.141	-0.149	9.990	-0.071	0.071	9.990	-0.246	0.475	-0.071	
99	-0.485	0.123	-0.080	0.568	-0.535	-0.034	9.990	-0.613	0.096	9.990	0.080	0.253	0.096	
100	-0.217	-0.198	0.194	-0.613	-0.198	0.266	9.990	-0.018	0.018	9.990	0.194	-0.141	0.018	
101	-0.127	0.592	-0.363	-0.206	0.200	-0.087	9.990	0.037	-0.037	9.990	0.139	0.209	-0.571	
102	0.412	0.288	0.136	-0.097	0.189	-0.147	9.990	0.172	0.400	9.990	0.530	-0.087	-0.172	
103	0.613	0.415	-0.699	0.019	-0.328	0.029	9.990	0.373	-0.373	9.990	-0.213	0.266	-0.373	
104	-0.091	0.356	-0.081	-0.103	0.337	-0.158	9.990	0.356	0.220	9.990	0.387	0.435	0.220	
105	-0.318	-0.589	0.880	-0.294	-0.389	-0.492	9.990	-0.096	-0.613	9.990	-0.424	0.690	-0.096	
106	0.123	0.528	0.555	0.096	-0.018	0.266	9.990	-0.667	0.667	9.990	0.555	0.071	1.000	
107	0.123	0.528	0.555	0.096	-0.018	0.266	9.990	-0.667	0.667	9.990	0.555	0.071	1.000	
108	0.123	0.528	0.555	0.096	-0.018	0.266	9.990	-0.667	0.667	9.990	0.555	0.071	1.000	
109	0.123	0.528	0.555	0.096	-0.018	0.266	9.990	-0.667	0.667	9.990	0.555	0.071	1.000	
110	0.295	0.622	0.421	-0.080	0.305	0.430	9.990	-0.555	0.555	9.990	0.878	0.246	0.885	
111	0.123	0.528	0.555	0.096	-0.018	0.266	9.990	-0.667	0.667	9.990	0.555	0.071	1.000	
112	0.123	0.528	0.555	0.096	-0.018	0.266	9.990	-0.667	0.667	9.990	0.555	0.071	1.000	
113	-0.295	0.622	0.421	-0.080	0.305	0.430	9.990	-0.555	0.555	9.990	0.878	0.246	0.885	
114	-0.191	0.662	0.421	-0.080	-0.194	-0.027	9.990	-0.555	0.555	9.990	0.421	0.246	0.885	
115	0.295	0.662	0.421	-0.080	-0.194	-0.027	9.990	-0.555	0.555	9.990	0.421	0.246	0.885	
116	0.278	0.697	0.213	0.459	-0.415	0.433	9.990	-0.373	0.373	9.990	0.213	0.461	0.788	

1	-0.479	-0.087	-0.223	0.098	-0.131	-0.127	-0.409	-0.057	-0.113	0.052	-0.057	-0.228
2	-0.046	0.071	-0.447	0.046	0.170	-0.060	-0.434	0.087	0.209	0.256	0.306	-0.217
3	-0.342	-0.403	-0.332	-0.178	0.224	-0.060	-0.266	-0.795	-0.309	-0.158	-0.019	0.047
4	0.165	0.158	-0.274	-0.094	0.124	-0.124	-0.241	0.234	0.459	0.007	0.430	0.119
5	-0.165	0.158	-0.274	-0.094	0.124	0.091	-0.241	0.027	0.228	0.007	0.234	0.338
6	-0.046	0.071	-0.447	-0.288	0.578	0.060	-0.434	-0.140	-0.052	0.256	0.087	0.227
7	0.613	-0.266	0.295	0.224	-0.443	0.443	-0.158	0.172	-0.037	0.071	0.172	0.220
8	0.424	0.027	0.128	0.052	-0.088	0.191	-0.017	0.136	0.139	-0.247	0.342	-0.081
9	-0.071	-0.403	-0.332	-0.178	-0.087	0.369	-0.266	-0.305	0.409	0.158	0.287	0.346
10	-0.022	-0.492	-0.390	-0.256	0.027	0.242	-0.342	-0.422	0.106	-0.046	0.097	0.837
11	-0.080	-0.430	0.128	0.032	0.295	0.588	-0.017	0.550	0.139	-0.046	0.342	-0.081
12	-0.106	-0.568	-0.443	-0.325	0.062	0.370	-0.011	-0.715	-0.376	0.052	-0.057	0.266
13	0.071	-0.403	-0.332	-0.178	-0.087	0.369	-0.266	-0.795	0.011	0.921	-0.019	0.047
14	-0.027	-0.379	0.025	-0.495	-0.079	-0.295	-0.224	0.227	0.127	0.060	-0.037	0.091
15	-0.342	-0.403	-0.332	-0.403	0.062	-0.569	-0.266	-0.305	-0.309	0.158	-0.019	-0.241
16	0.179	-0.295	-0.266	-0.087	0.495	-0.569	0.266	-0.464	-0.682	0.046	-0.158	0.586
17	-0.106	-0.332	-0.223	-0.077	0.325	0.131	-0.146	0.198	0.191	0.052	-0.057	0.016
18	0.158	-0.266	0.000	-0.077	0.101	-0.101	-0.146	0.158	-0.087	0.041	-0.136	0.387
19	0.424	-0.027	0.128	0.052	-0.088	0.191	-0.017	-0.136	0.139	-0.247	-0.037	0.213
20	-0.585	-0.291	-0.346	-0.046	0.535	-0.298	0.158	-0.306	-0.158	0.256	-0.136	0.436
21	-0.022	0.034	-0.390	-0.256	0.027	-0.318	0.071	-0.172	0.479	-0.046	0.379	0.437
22	-0.034	-0.528	0.158	-0.667	0.452	-0.252	-0.403	0.332	-0.087	0.071	0.447	0.248
23	-0.390	-0.158	0.571	0.019	-0.025	-0.025	-0.332	0.332	-0.229	-0.090	-0.532	-0.274
24	0.158	0.318	0.409	-0.077	0.101	-0.415	-0.146	0.158	0.266	0.369	-0.418	-0.369
25	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990
26	0.096	-0.266	0.295	0.224	-0.443	-0.123	-0.087	-0.400	-0.037	0.071	-0.400	-0.356
27	-0.027	-0.252	-0.389	0.113	0.079	-0.079	-0.087	-0.007	-0.127	-0.060	0.209	0.332
28	-0.183	0.266	0.505	0.356	0.471	0.031	0.232	0.288	-0.027	0.113	0.046	0.121
29	0.424	0.027	0.128	0.052	-0.191	-0.295	-0.017	-0.550	0.139	0.246	-0.136	-0.511
30	-0.568	-0.492	-0.151	-0.256	-0.242	-0.027	-0.342	-0.422	0.479	0.253	0.097	-0.596
31	-0.183	-0.194	-0.491	-0.554	-0.266	-0.217	-0.087	-0.189	0.694	-0.113	0.926	-0.113
32	-0.034	-0.150	-0.217	-0.353	-0.172	-0.041	0.113	0.147	0.618	0.149	0.348	-0.158
33	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990
34	-0.096	0.266	0.295	-0.699	0.443	0.123	-0.158	-0.172	-0.037	0.486	-0.172	-0.220
35	0.096	0.312	0.295	0.224	0.133	-0.123	0.158	0.172	-0.037	0.071	0.172	-0.356
36	-0.090	0.027	0.128	0.052	0.295	-0.123	0.487	0.342	0.139	-0.247	0.342	-0.081
37	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990
38	-0.315	-0.142	-0.090	0.046	0.170	0.060	-0.158	0.087	0.209	0.256	-0.400	0.220
39	-0.613	0.248	-0.500	-0.237	0.509	-0.123	0.158	0.172	-0.037	0.071	0.400	-0.220
40	-0.080	0.471	0.623	0.052	-0.191	-0.295	-0.017	-0.607	-0.228	-0.027	-0.183	-0.339
41	0.500	0.353	0.019	0.363	-0.223	-0.113	-0.178	-0.158	0.139	-0.247	0.342	-0.511
42	0.500	0.353	0.019	0.363	-0.223	-0.113	-0.178	-0.158	0.139	-0.247	0.342	-0.511
43	0.500	0.353	0.019	0.363	-0.223	-0.113	-0.178	-0.158	0.139	-0.247	0.342	-0.511
44	0.500	0.353	0.019	0.363	-0.223	-0.113	-0.178	-0.158	0.139	-0.247	0.342	-0.511
45	0.500	0.353	0.019	0.363	-0.223	-0.113	-0.178	-0.158	0.139	-0.247	0.342	-0.511
46	0.500	0.353	0.019	0.363	-0.223	-0.113	-0.178	-0.158	0.139	-0.247	0.342	-0.511
47	0.305	-0.459	0.071	-0.473	-0.025	0.025	-0.071	-0.287	0.223	-0.000	-0.019	-0.346
48	-0.391	-0.177	-0.385	0.266	0.369	-0.369	-0.163	0.287	-0.409	-0.521	0.199	-0.047
49	0.342	-0.177	-0.385	0.266	0.369	-0.369	-0.163	0.287	-0.409	-0.521	0.199	-0.047
50	0.479	-0.158	0.223	-0.426	0.131	-0.582	-0.087	0.019	0.163	-0.317	-0.190	-0.036
51	0.123	0.077	0.158	0.024	0.471	0.031	-0.087	0.299	-0.191	0.209	-0.409	0.121
52	1.000	0.778	0.825	0.179	0.027	-0.172	0.158	0.370	0.106	0.291	0.172	0.778
53	0.625	0.588	1.000	0.353	0.172	-0.025	-0.113	0.060	-0.158	0.046	-0.332	0.098
54	0.625	0.588	1.000	0.353	0.172	-0.025	-0.113	0.060	-0.158	0.046	-0.332	0.098
55	0.625	0.588	1.000	0.353	0.172	-0.025	-0.113	0.060	-0.158	0.046	-0.332	0.098
56	0.179	0.353	0.019	-0.223	-0.223	0.516	-0.178	-0.444	-0.760	-0.046	-0.178	0.124
57	-0.027	-0.172	0.401	-0.223	1.000	0.516	-0.178	-0.444	-0.760	-0.046	-0.178	0.124
58	-0.027	-0.172	0.401	-0.223	1.000	0.516	-0.178	-0.444	-0.760	-0.046	-0.178	0.124
59	-0.027	-0.172	0.401	-0.223	1.000	0.516	-0.178	-0.444	-0.760	-0.046	-0.178	0.124
60	-0.027	-0.172	0.401	-0.223	1.000	0.516	-0.178	-0.444	-0.760	-0.046	-0.178	0.124
61	-0.027	-0.172	0.401	-0.223	1.000	0.516	-0.178	-0.444	-0.760	-0.046	-0.178	0.124
62	-0.027	-0.172	0.401	-0.223	1.000	0.516	-0.178	-0.444	-0.760	-0.046	-0.178	0.124
63	-0.027	-0.172	0.401	-0.223	1.000	0.516	-0.178	-0.444	-0.760	-0.046	-0.178	0.124
64	-0.027	-0.172	0.401	-0.223	1.000	0.516	-0.178	-0.444	-0.760	-0.046	-0.178	0.124
65	-0.027	-0.172	0.401	-0.223	1.000	0.516	-0.178	-0.444	-0.760	-0.046	-0.178	0.124

1	66	67	68	69	70	71	72	73	74	75	76	77	78
	-0.613	-0.139	9.990	0.037	-0.087	-0.229	0.016	-0.363	-0.087	-0.016	0.016	0.139	-0.459
2	-0.041	-0.247	9.990	0.071	-0.562	-0.346	-0.217	-0.246	-0.041	-0.007	-0.642	0.247	-0.087
3	-0.146	-0.017	9.990	0.158	-0.403	-0.395	-0.241	-0.487	-0.234	-0.047	-0.241	0.017	-0.287
4	-0.213	-0.511	9.990	0.220	-0.248	-0.649	-0.271	-0.397	0.369	-0.523	-0.067	0.081	-0.430
5	-0.213	-0.511	9.990	0.220	-0.046	-0.649	-0.338	-0.387	0.369	-0.338	-0.465	0.081	-0.430
6	-0.041	-0.247	9.990	0.071	-0.149	-0.535	0.007	-0.246	0.516	-0.227	-0.217	0.247	-0.306
7	-0.459	-0.555	9.990	0.667	0.312	-0.235	0.220	-0.555	-0.459	0.356	-0.356	-0.555	-0.172
8	-0.783	0.421	9.990	0.555	0.027	-0.128	-0.081	-0.421	-0.309	0.081	-0.081	-0.555	-0.342
9	-0.146	0.487	9.990	0.158	-0.113	-0.395	0.346	-0.407	0.146	0.241	-0.762	0.017	-0.287
10	0.209	0.424	9.990	0.096	-0.231	-0.305	0.165	-0.424	0.209	0.103	-0.596	0.080	-0.097
11	-0.309	0.421	9.990	0.555	0.027	-0.623	0.266	-0.878	-0.309	-0.387	-0.511	-0.421	-0.342
12	0.266	0.363	9.990	0.037	-0.087	0.223	0.266	-0.363	0.266	0.228	-0.667	0.139	-0.198
13	0.146	0.487	9.990	0.158	-0.113	0.071	0.346	-0.487	0.146	0.241	-0.762	0.017	-0.287
14	0.415	0.191	9.990	-0.123	-0.172	-0.707	-0.509	-0.191	0.415	-0.509	0.091	-0.191	-0.007
15	0.146	0.487	9.990	0.158	-0.113	0.332	-0.512	-0.487	0.146	-0.047	0.047	0.017	0.335
16	0.077	0.052	9.990	0.224	0.031	0.266	0.237	-0.052	0.077	0.409	-0.409	-0.052	-0.176
17	0.266	0.363	9.990	0.037	-0.087	-0.565	0.266	-0.363	0.266	-0.535	0.016	-0.363	0.299
18	-0.189	0.309	9.990	0.835	0.318	0.000	-0.369	-0.783	-0.189	-0.213	0.213	-0.309	0.418
19	-0.309	0.421	9.990	0.555	-0.430	-0.128	-0.081	-0.421	-0.309	0.081	-0.081	-0.421	0.136
20	0.309	0.247	9.990	0.486	-0.291	-0.090	-0.227	-0.247	0.369	-0.227	-0.103	0.080	-0.097
21	0.209	-0.027	9.990	0.613	-0.231	-0.851	-0.103	-0.734	0.209	-0.440	0.046	0.471	0.060
22	0.318	0.027	9.990	0.266	0.052	-0.545	-0.158	-0.430	0.577	-0.440	0.500	0.128	0.332
23	0.000	0.023	9.990	0.295	0.588	0.191	-0.369	-0.128	-0.409	-0.098	0.500	-0.309	0.648
24	-0.633	0.783	9.990	0.835	0.577	0.000	0.000	-0.783	-0.189	-0.783	0.500	0.309	0.990
25	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990
26	-0.459	0.885	9.990	0.667	0.312	-0.295	0.220	-0.555	-0.459	-0.220	0.220	-0.555	0.400
27	0.468	-0.191	9.990	0.123	0.379	0.025	0.124	0.191	-0.101	-0.124	0.124	0.588	-0.443
28	-0.021	-0.194	9.990	0.528	0.682	0.287	0.356	-0.305	-0.021	0.113	0.582	-0.421	-0.046
29	-0.309	0.878	9.990	0.555	0.027	-0.128	-0.081	-0.421	0.309	-0.387	-0.081	0.421	0.136
30	0.209	0.734	9.990	0.613	-0.231	0.151	0.165	-0.424	-0.158	-0.437	0.165	0.080	0.172
31	-0.021	0.305	9.990	0.266	-0.421	-0.158	0.121	-0.305	0.319	-0.356	-0.158	-0.662	-0.208
32	-0.266	-0.027	9.990	0.266	0.052	-0.158	0.046	-0.430	0.577	-0.248	-0.158	-0.430	0.060
33	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990
34	0.459	-0.555	9.990	-0.667	0.266	0.295	0.356	0.555	-0.459	-0.356	0.356	0.555	0.172
35	-0.459	0.555	9.990	1.000	0.312	-0.295	-0.356	-0.885	-0.459	-0.220	0.220	-0.555	0.400
36	-0.309	0.421	9.990	0.885	0.471	-0.623	-0.081	-0.878	-0.309	-0.387	0.187	0.421	0.136
37	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990
38	-0.041	-0.247	9.990	0.667	0.071	0.447	0.227	-0.246	-0.041	0.217	0.435	-0.246	0.140
39	-0.835	0.555	9.990	0.356	0.312	-0.295	-0.356	0.555	-0.459	-0.356	0.356	0.555	0.400
40	-0.369	0.081	9.990	0.555	-0.158	0.098	0.067	-0.511	-0.783	0.081	-0.358	-0.081	0.027
41	-0.783	0.421	9.990	0.224	0.031	-0.128	-0.081	-0.421	0.077	1.064	-0.094	-0.533	-0.342
42	-0.762	0.052	9.990	0.224	0.031	-0.019	-0.409	-0.553	0.077	0.094	-0.409	-0.533	0.158
43	-0.317	0.052	9.990	0.224	0.031	-0.019	-0.409	-0.553	0.077	0.094	-0.409	-0.533	0.158
44	-0.317	0.052	9.990	0.224	0.031	-0.019	-0.409	-0.553	0.077	0.094	-0.409	-0.533	0.158
45	-0.317	0.052	9.990	0.224	0.031	-0.019	-0.409	-0.553	0.077	0.094	-0.409	-0.533	0.158
46	-0.317	0.052	9.990	0.224	0.031	-0.019	-0.409	-0.553	0.077	0.094	-0.409	-0.533	0.158
47	-0.409	0.128	9.990	0.295	0.217	-0.124	-0.274	-0.623	0.000	0.274	-0.047	0.487	0.332
48	-0.409	0.128	9.990	0.295	0.217	-0.124	-0.274	-0.623	0.000	0.274	-0.047	0.487	0.332
49	-0.234	-0.146	9.990	-0.158	-0.177	-0.071	-0.654	-0.017	-0.146	-0.241	-0.047	0.487	-0.019
50	-0.213	-0.081	9.990	-0.158	-0.177	-0.071	-0.654	-0.017	-0.146	-0.241	-0.047	0.487	-0.019
51	-0.087	0.139	9.990	-0.037	0.087	0.274	-0.271	0.081	-0.213	0.067	-0.067	0.081	-0.027
52	-0.021	0.662	9.990	-0.018	0.484	-0.158	-0.266	0.363	-0.213	-0.459	0.228	0.098	0.198
53	-0.158	-0.080	9.990	0.096	0.295	-0.305	-0.594	0.194	-0.021	0.113	0.394	0.194	0.409
54	-0.577	-0.430	9.990	0.312	0.150	-0.217	-0.440	-0.027	-0.318	0.103	-0.103	0.080	0.172
55	-0.409	-0.128	9.990	0.295	0.713	-0.124	0.098	-0.128	-0.409	-0.098	0.649	-0.027	0.147
56	-0.677	-0.052	9.990	0.224	0.031	0.266	-0.094	-0.052	-0.317	0.705	-0.094	-0.052	0.158
57	-0.468	-0.191	9.990	0.123	0.572	0.025	-0.031	-0.295	-0.415	0.305	0.124	0.052	0.443
58	0.415	-0.295	9.990	-0.123	0.452	0.401	0.697	-0.191	-0.101	-0.332	-0.332	-0.332	-0.227

59	66	67	68	69	70	71	72	73	74	75	76	77	78
	0.146	-0.017	9.990	0.158	0.459	-0.385	0.346	0.017	0.146	0.512	0.654	-0.487	-0.287
60	-0.158	-0.550	9.990	0.172	0.266	-0.037	0.027	0.136	0.418	-0.027	0.430	0.136	-0.322
61	-0.234	-0.017	9.990	0.158	0.396	-0.071	0.346	0.017	-0.0712	0.512	0.047	-0.487	-0.019
62	-0.266	0.139	9.990	-0.037	-0.396	-0.223	-0.266	-0.139	0.087	0.567	-0.266	-0.067	-0.299
63	-0.041	0.246	9.990	0.071	0.071	-0.346	0.007	0.246	-0.041	-0.227	-0.217	0.625	-0.140
64	0.418	-0.550	9.990	0.158	0.060	-0.452	0.172	0.342	-0.041	-0.430	-0.387	0.136	-0.678
65	0.369	-0.511	9.990	0.356	0.060	-0.500	0.234	0.511	0.358	-0.465	-0.271	0.081	-0.027
66	1.000	-0.511	9.990	-0.459	0.266	0.000	0.613	0.309	0.189	0.500	-0.213	0.783	0.158
67	-0.309	1.000	9.990	0.555	0.027	-0.128	-0.081	-0.421	0.309	0.081	-0.081	-0.421	0.550
68	0.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990
69	0.459	0.555	9.990	0.459	0.312	-0.295	-0.356	-0.889	-0.459	-0.220	0.220	0.555	-0.400
70	0.266	0.027	9.990	0.312	1.000	-0.217	0.500	-0.471	0.318	0.248	0.356	0.430	-0.060
71	0.000	0.128	9.990	0.000	0.346	0.000	0.007	0.471	0.000	0.500	0.274	0.128	0.613
72	0.000	0.128	9.990	0.000	0.346	0.000	0.007	0.471	0.000	0.500	0.274	0.128	0.613
73	0.000	0.128	9.990	0.000	0.346	0.000	0.007	0.471	0.000	0.500	0.274	0.128	0.613
74	0.000	0.128	9.990	0.000	0.346	0.000	0.007	0.471	0.000	0.500	0.274	0.128	0.613
75	0.000	0.128	9.990	0.000	0.346	0.000	0.007	0.471	0.000	0.500	0.274	0.128	0.613
76	0.000	0.128	9.990	0.000	0.346	0.000	0.007	0.471	0.000	0.500	0.274	0.128	0.613
77	0.000	0.128	9.990	0.000	0.346	0.000	0.007	0.471	0.000	0.500	0.274	0.128	0.613
78	0.000	0.128	9.990	0.000	0.346	0.000	0.007	0.471	0.000	0.500	0.274	0.128	0.613
79	0.000	0.128	9.990	0.000	0.346	0.000	0.007	0.471	0.000	0.500	0.274	0.128	0.613
80	0.000	0.128	9.990	0.000	0.346	0.000	0.007	0.471	0.000	0.500	0.274	0.128	0.613
81	0.000	0.128	9.990	0.000	0.346	0.000	0.007	0.471	0.000	0.500	0.274	0.128	0.613
82	0.000	0.128	9.990	0.000	0.346	0.000	0.007	0.471	0.000	0.500	0.274	0.128	0.613
83	0.000	0.128	9.990	0.000	0.346	0.000	0.007	0.471	0.000	0.500	0.274	0.128	0.613
84	0.000	0.128	9.990	0.000	0.346	0.000	0.007	0.471	0.000	0.500	0.274	0.128	0.613
85	0.000	0.128	9.990	0.000	0.346	0.000	0.007	0.471	0.000	0.500	0.274	0.128	0.613
86	0.000	0.128	9.990	0.000	0.346	0.000	0.007	0.471	0.000	0.500	0.274	0.128	0.613
87	0.000	0.128	9.990	0.000	0.346	0.000	0.007	0.471	0.000	0.500	0.274	0.128	0.613
88	0.000	0.128	9.990	0.000	0.346	0.000	0.007	0.471	0.000	0.500	0.274	0.128	0.613
89	0.000	0.128	9.990	0.000	0.346	0.000	0.007	0.471	0.000	0.500	0.274	0.128	0.613
90	0.000	0.128	9.990	0.000	0.346	0.000	0.007	0.471	0.000	0.500	0.274	0.128	0.613
91	0.000	0.128	9.990	0.000	0.346	0.000	0.007	0.471	0.000	0.500	0.274	0.128	0.613
92	0.000	0.128	9.990	0.000	0.346	0.000	0.007	0.471	0.000	0.500	0.274	0.128	0.613
93	0.000	0.128	9.990	0.000	0.346	0.000	0.007	0.471	0.000	0.500	0.274	0.128	0.613
94	0.000	0.128	9.990	0.000	0.346	0.000	0.007	0.471	0.000	0.500	0.274	0.128	0.613
95	0.000	0.128	9.990	0.000	0.346	0.000	0.007	0.471	0.000	0.500	0.274	0.128	0.613
96	0.000	0.128	9.990	0.000	0.346	0.000	0.007	0.471	0.000	0.500	0.274	0.128	0.613
97	0.000	0.128	9.990	0.000	0.346	0.000	0.007	0.471	0.000	0.500	0.274	0.128	0.613
98	0.000	0.128	9.990	0.000	0.346	0.000	0.007	0.471	0.000	0.500	0.274	0.128	0.613
99	0.000	0.128	9.990	0.000	0.346	0.000	0.007	0.471	0.000	0.500	0.274	0.128	0.613
100	0.000	0.128	9.990	0.000	0.346	0.000	0.007	0.471	0.000	0.500	0.274	0.128	0.613
101	0.000	0.128	9.990	0.000	0.346	0.000	0.007	0.471	0.000	0.500	0.274	0.128	0.613
102	0.000	0.128	9.990	0.000	0.346	0.000	0.007	0.471	0.000	0.500	0.274	0.128	0.613
103	0.000	0.128	9.990	0.000	0.346	0.000	0.007	0.471	0.000	0.500	0.274	0.128	0.613
104	0.000	0.128	9.990	0.000	0.346	0.000	0.007	0.471	0.000	0.500	0.274	0.128	0.613
105	0.000	0.128	9.990	0.000	0.346	0.000	0.007	0.471	0.000	0.500	0.274	0.128	0.613
106	0.000	0.128	9.990	0.000	0.346	0.000	0.007	0.471	0.000	0.500	0.274	0.128	0.613
107	0.000	0.128	9.990	0.000	0.346	0.000	0.007	0.471	0.000	0.500	0.274	0.128	0.613
108	0.000	0.128	9.990	0.000	0.346	0.000	0.007	0.471	0.000	0.500	0.274	0.128	0.613
109	0.000	0.128	9.990	0.000	0.346	0.000	0.007	0.471	0.000	0.500	0.274	0.128	0.613
110	0.000	0.128	9.990	0.000	0.346	0.000	0.007	0.471	0.000	0.500	0.274	0.128	0.613
111	0.000	0.128	9.990	0.000	0.346	0.000	0.007	0.471	0.000	0.500	0.274	0.128	0.613
112	0.000	0.128	9.990	0.000	0.346	0.000	0.007	0.471	0.000	0.500	0.274	0.128	0.613
113	0.000	0.128	9.990	0.000	0.346	0.000	0.007	0.471	0.000	0.500	0.274	0.128	0.613
114	0.000	0.128	9.990	0.000	0.346	0.000	0.007	0.471	0.000	0.500	0.274	0.128	0.613
115	0.000	0.128	9.990	0.000	0.346	0.000	0.007	0.471	0.000	0.500	0.274	0.128	0.613
116	0.000	0.128	9.990	0.000	0.346	0.000	0.007	0.471	0.000	0.500	0.274	0.128	0.613

117	-0.633	0.309	9.990	0.459	0.318	0.000	0.213	-0.309	-0.189	-0.500	0.500	-0.309	-0.158
118	-0.234	0.487	9.990	0.158	0.177	-0.385	0.346	0.017	0.146	-0.241	-0.241	0.017	-0.287
119	-0.783	0.421	9.990	0.555	0.027	-0.623	-0.346	0.017	-0.309	-0.387	-0.081	-0.421	0.136
120	-0.234	0.487	9.990	0.158	0.177	-0.385	0.346	0.017	0.146	-0.241	-0.241	0.017	0.287
121	-0.835	0.555	9.990	0.667	0.312	-0.295	-0.336	0.555	-0.459	-0.220	0.220	-0.555	0.400
122	-0.783	0.421	9.990	0.555	0.027	-0.128	-0.081	-0.421	-0.309	0.081	0.387	-0.421	0.136
123	-0.783	0.421	9.990	0.555	0.471	-0.128	-0.081	-0.421	-0.309	0.081	0.387	-0.421	0.136
124	-0.783	0.421	9.990	0.555	0.471	-0.128	-0.081	-0.421	-0.309	0.081	0.387	-0.421	0.136
125	-0.633	0.309	9.990	0.459	0.577	-0.015	0.213	-0.309	-0.189	-0.213	0.213	-0.309	-0.158
126	-0.783	0.421	9.990	0.555	0.471	-0.128	-0.081	-0.421	-0.309	0.081	0.387	-0.421	0.136
127	-0.835	0.555	9.990	0.667	0.312	-0.295	-0.336	0.555	-0.459	-0.220	0.220	-0.555	0.400
128	-0.835	0.555	9.990	0.667	0.312	-0.295	-0.336	0.555	-0.459	-0.220	0.220	-0.555	0.400
129	-0.783	0.421	9.990	0.555	0.027	-0.128	-0.081	-0.421	-0.309	0.061	0.051	-0.421	0.136
130	-0.835	0.555	9.990	0.667	0.312	-0.295	-0.336	0.555	-0.459	-0.220	0.220	-0.555	0.400
131	-0.835	0.555	9.990	0.667	0.312	-0.295	-0.336	0.555	-0.459	-0.220	0.220	-0.555	0.400
132	-0.835	0.555	9.990	0.667	0.312	-0.295	-0.336	0.555	-0.459	-0.220	0.220	-0.555	0.400
133	-0.835	0.555	9.990	0.667	0.312	-0.295	-0.336	0.555	-0.459	-0.220	0.220	-0.555	0.400
134	-0.835	0.555	9.990	0.667	0.312	-0.295	-0.336	0.555	-0.459	-0.220	0.220	-0.555	0.400
135	-0.835	0.555	9.990	0.667	0.312	-0.295	-0.336	0.555	-0.459	-0.220	0.220	-0.555	0.400
136	-0.835	0.555	9.990	0.667	0.312	-0.295	-0.336	0.555	-0.459	-0.220	0.220	-0.555	0.400
137	-0.512	0.213	9.990	0.373	0.480	0.104	0.384	-0.213	-0.087	0.526	-0.087	-0.213	0.570
138	-0.077	0.553	9.990	0.224	0.353	-0.473	0.237	0.052	-0.762	-0.237	-0.094	-0.052	-0.176
139	-0.309	0.421	9.990	0.555	0.353	-0.473	0.237	0.052	-0.762	-0.237	-0.094	-0.052	-0.342
140	-0.309	0.421	9.990	0.555	0.353	-0.473	0.237	0.052	-0.762	-0.237	-0.094	-0.052	-0.046
141	-0.309	0.421	9.990	0.555	0.353	-0.473	0.237	0.052	-0.762	-0.237	-0.094	-0.052	0.136
142	-0.021	0.194	9.990	0.037	0.027	-0.623	-0.081	0.305	-0.021	0.121	0.121	0.421	0.194
143	-0.087	0.363	9.990	0.037	0.618	-0.505	-0.081	0.305	-0.021	0.121	0.121	0.421	0.194
144	-0.077	0.553	9.990	0.224	0.353	-0.473	0.237	0.052	-0.762	-0.237	-0.094	-0.052	0.139
145	-0.189	0.309	9.990	0.459	0.318	-0.409	0.213	0.309	0.633	0.369	0.213	-0.309	-0.459
146	-0.309	0.421	9.990	0.555	0.027	-0.128	-0.081	-0.421	-0.309	0.051	0.511	-0.421	0.553
147	-0.409	0.128	9.990	0.295	-0.158	-0.571	-0.274	0.623	0.077	0.094	0.274	-0.128	-0.452
148	-0.317	0.553	9.990	0.224	0.031	0.266	-0.094	0.052	0.077	0.094	0.094	-0.553	0.158
149	-0.317	0.553	9.990	0.224	0.031	0.266	-0.094	0.052	0.077	0.094	0.094	-0.553	-0.176
150	-0.512	0.213	9.990	0.373	0.029	0.104	0.384	0.213	-0.087	0.087	-0.087	-0.213	-0.332
151	-0.409	0.128	9.990	0.295	0.217	0.191	-0.274	0.128	-0.409	0.274	0.500	-0.128	0.669
152	-0.512	0.213	9.990	0.373	0.033	0.104	-0.526	0.213	-0.512	0.087	0.087	-0.213	-0.332
153	-0.209	0.080	9.990	0.613	0.034	0.151	0.165	-0.424	0.1209	-0.437	0.165	-0.424	-0.097
154	-0.146	0.487	9.990	0.158	-0.113	-0.385	0.047	0.017	0.146	0.241	-0.241	0.017	0.019
155	-0.146	0.487	9.990	0.158	-0.113	-0.385	0.047	0.017	0.146	0.241	-0.241	0.017	0.019
156	-0.000	0.000	9.990	0.295	0.623	-0.689	0.098	0.128	0.000	-0.047	0.098	0.128	0.232
157	-0.317	0.553	9.990	0.224	-0.158	-0.571	-0.409	0.052	0.077	0.094	0.237	-0.553	-0.176
158	-0.000	0.128	9.990	0.295	0.158	-0.571	-0.409	0.052	0.077	0.094	0.237	-0.553	-0.176
159	-0.409	0.128	9.990	0.295	-0.545	0.191	-0.098	0.128	-0.409	0.629	-0.274	-0.623	-0.037
160	-0.189	0.783	9.990	0.459	0.539	-0.409	-0.369	0.309	-0.189	0.629	-0.369	-0.309	0.418
161	-0.087	0.213	9.990	0.373	0.480	-0.251	0.384	0.213	-0.512	0.512	0.087	-0.213	0.418
162	-0.087	0.699	9.990	0.788	0.029	-0.251	-0.087	0.699	0.087	-0.583	0.384	-0.213	0.418
163	-0.715	0.247	9.990	-0.071	-0.071	-0.447	-0.227	0.247	0.369	-0.830	0.217	-0.247	0.306
164	-0.087	0.213	9.990	0.373	0.029	-0.682	0.583	0.213	-0.512	0.087	0.217	-0.213	-0.332
165	-0.087	0.699	9.990	0.788	0.029	-0.447	-0.227	0.247	0.369	-0.830	0.217	-0.247	0.306
166	-0.087	0.699	9.990	0.788	0.029	-0.447	-0.227	0.247	0.369	-0.830	0.217	-0.247	0.306
167	-0.087	0.699	9.990	0.788	0.029	-0.447	-0.227	0.247	0.369	-0.830	0.217	-0.247	0.306

1	79	80	81	82	83	84	85	86	87	88	89	90	91
2	-0.335	0.228	0.325	-0.229	-0.513	0.113	9.990	0.392	0.299	-0.092	0.309	0.198	0.459
3	-0.651	-0.227	-0.046	0.090	-0.435	0.335	9.990	0.220	-0.087	0.220	-0.158	0.097	0.217
4	0.158	0.241	0.178	0.332	-0.346	-0.335	9.990	-0.248	0.565	-0.248	0.163	0.305	0.241
5	-0.435	0.067	0.409	-0.098	-0.139	0.016	9.990	0.384	0.384	-0.087	0.241	0.027	0.465
6	-0.256	0.067	-0.237	-0.098	0.007	0.016	9.990	0.384	-0.027	0.384	-0.512	-0.183	0.067
7	-0.071	0.356	-0.443	0.090	-0.007	0.335	9.990	0.220	0.140	0.266	-0.158	0.140	0.436
8	-0.247	0.081	-0.224	-0.295	0.356	0.037	9.990	0.373	0.400	0.373	0.656	0.172	0.356
9	-0.521	-0.047	-0.052	-0.128	0.081	0.363	9.990	0.213	0.136	0.213	0.770	-0.136	0.091
10	-0.253	0.103	0.256	0.390	-0.047	0.309	9.990	-0.248	0.019	-0.248	-0.266	0.613	-0.047
11	-0.246	0.081	-0.052	-0.128	0.081	0.098	9.990	0.213	0.136	0.213	0.309	0.379	-0.165
12	0.209	0.228	-0.426	-0.443	-0.047	0.206	9.990	-0.309	0.172	-0.309	-0.342	0.342	0.081
13	-0.158	0.241	-0.578	0.332	-0.047	0.568	9.990	0.364	0.299	0.364	0.309	0.057	0.228
14	-0.535	-0.091	-0.223	0.401	0.124	0.131	9.990	0.206	-0.443	-0.248	-0.224	-0.019	0.212
15	0.434	0.241	-0.578	0.071	-0.047	0.409	9.990	0.248	0.305	0.206	0.163	0.305	0.512
16	-0.288	0.094	-0.363	0.266	0.409	-0.325	9.990	-0.248	0.464	-0.181	0.1578	-0.464	0.094
17	-0.639	0.266	-0.426	0.223	0.266	0.191	9.990	0.392	-0.720	0.392	-0.011	-0.299	-0.016
18	-0.041	0.613	-0.317	-0.409	0.613	-0.266	9.990	0.087	0.648	0.087	0.234	0.158	0.369
19	-0.246	-0.387	-0.052	-0.128	-0.387	0.363	9.990	0.213	0.136	0.213	-0.017	0.342	-0.387
20	-0.223	0.007	-0.807	-0.090	0.007	-0.052	9.990	-0.220	-0.140	-0.461	0.434	-0.087	0.227
21	-0.595	0.103	-0.179	0.151	0.103	-0.106	9.990	-0.019	0.172	-0.309	-0.517	0.037	-0.165
22	-0.363	0.158	-0.628	-0.158	0.158	0.087	9.990	-0.029	0.060	0.029	-0.177	0.348	0.158
23	0.626	0.266	-0.628	-0.124	0.626	-0.223	9.990	-0.104	-0.037	0.251	-0.332	-0.332	0.500
24	-0.041	-0.213	-0.317	-0.815	0.613	0.087	9.990	0.087	-0.158	0.512	-0.146	0.158	0.613
25	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990
26	0.486	-0.220	-0.224	-0.295	0.336	0.037	9.990	0.373	-0.172	0.373	0.158	0.400	0.356
27	-0.170	-0.124	0.223	0.389	0.091	-0.370	9.990	0.278	0.007	-0.206	-0.087	-0.227	0.091
28	0.113	0.113	-0.024	-0.505	0.113	0.290	9.990	0.328	0.189	0.328	-0.087	0.528	0.113
29	0.625	0.387	-0.052	-0.128	0.081	-0.139	9.990	0.213	0.036	0.213	-0.017	0.550	0.511
30	0.315	0.359	-0.179	0.151	-0.437	0.106	9.990	-0.309	-0.097	0.309	-0.517	0.097	-0.165
31	-0.141	0.113	-0.024	0.287	-0.356	0.328	9.990	0.328	-0.288	0.328	-0.087	0.446	0.113
32	-0.149	0.158	0.353	0.217	-0.046	0.087	9.990	-0.029	-0.147	0.433	-0.177	0.447	0.158
33	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990
34	0.071	0.220	0.224	0.295	0.220	-0.037	9.990	0.373	-0.400	-0.373	-0.656	-0.172	0.356
35	-0.071	0.356	-0.699	-0.743	0.356	0.037	9.990	0.373	0.400	0.213	-0.017	0.342	0.511
36	-0.246	0.511	-0.553	-0.623	0.511	-0.139	9.990	0.699	9.990	9.990	9.990	9.990	9.990
37	9.990	9.990	9.990	9.990	9.990	0.335	9.990	0.220	0.140	0.461	0.521	0.306	0.217
38	0.223	0.436	-0.046	0.090	-0.227	0.371	9.990	0.373	-0.172	0.788	0.158	0.172	0.356
39	-0.071	-0.224	-0.224	-0.743	0.356	0.371	9.990	-0.384	-0.183	-0.384	-0.047	0.397	-0.067
40	0.007	-0.067	-0.094	0.098	-0.067	0.363	9.990	0.181	0.342	0.699	0.487	0.136	0.387
41	0.625	0.387	-0.052	-0.623	0.081	0.062	9.990	-0.181	-0.158	0.149	0.266	0.542	0.094
42	-0.046	-0.237	0.339	-0.019	0.094	0.426	9.990	-0.181	0.164	0.149	-0.178	0.542	0.409
43	0.046	-0.237	0.339	-0.019	0.094	0.426	9.990	-0.181	0.164	0.149	-0.178	0.542	0.409
44	-0.046	-0.237	0.339	-0.019	0.094	0.426	9.990	-0.181	0.164	0.149	-0.178	0.542	0.409
45	-0.046	-0.237	0.339	-0.019	0.094	0.426	9.990	-0.181	0.164	0.149	-0.178	0.542	0.409
46	-0.046	-0.237	0.339	-0.019	0.094	0.426	9.990	-0.181	0.164	0.149	-0.178	0.542	0.409
47	-0.346	-0.098	0.266	-0.124	0.274	0.565	9.990	0.104	0.332	0.251	-0.071	0.613	0.274
48	-0.158	0.346	0.266	-0.124	0.274	0.565	9.990	0.104	0.332	0.251	-0.071	0.613	0.274
49	-0.158	-0.512	-0.178	-0.071	-0.241	-0.309	9.990	-0.080	-0.297	-0.060	0.266	0.019	0.654
50	0.217	-0.338	0.094	-0.500	0.067	0.266	9.990	-0.080	0.297	-0.060	0.266	0.019	0.654
51	-0.443	0.016	-0.325	-0.223	-0.223	-0.376	9.990	0.354	0.057	-0.392	0.309	0.198	0.337
52	0.553	0.337	0.387	0.287	0.545	0.518	9.990	0.338	0.189	-0.158	-0.468	0.288	0.103
53	-0.253	-0.437	-0.179	-0.305	0.359	-0.106	9.990	-0.309	0.422	-0.019	-0.342	-0.147	-0.358
54	-0.071	-0.540	-0.353	-0.713	0.248	0.396	9.990	0.029	-0.060	0.029	-0.113	0.452	-0.500
55	-0.090	-0.098	-0.019	-0.826	0.629	0.229	9.990	-0.104	-0.037	0.682	-0.332	0.094	0.305
56	-0.046	-0.586	-0.087	-0.266	-0.237	0.098	9.990	-0.149	0.740	-0.181	-0.578	-0.158	0.305
57	-0.060	0.091	-0.495	-0.401	0.697	0.682	9.990	-0.206	0.007	-0.206	-0.087	0.412	-0.395
58	-0.060	0.124	0.113	0.401	0.332	0.370	9.990	-0.278	0.209	-0.278	0.087	0.443	-0.395

59	-0.521	0.241	-0.266	0.071	0.241	-0.409	9.990	0.060	0.019	0.060	-0.266	0.613	-0.346
60	-0.482	-0.027	0.158	-0.613	-0.027	-0.521	5.990	0.545	0.097	0.545	-0.019	0.512	-0.027
61	0.158	-0.047	0.170	0.071	0.312	0.309	9.990	0.060	-0.715	0.060	0.163	0.287	-0.654
62	0.052	-0.228	0.426	-0.223	-0.459	-0.376	9.990	0.092	-0.057	0.364	-0.309	-0.198	0.515
63	0.223	-0.007	-0.443	-0.346	-0.007	-0.209	9.990	0.266	0.369	0.220	-0.158	0.159	0.436
64	-0.087	-0.430	0.464	0.332	-0.234	-0.299	9.990	0.332	0.309	-0.146	0.287	0.097	0.183
65	-0.435	-0.139	-0.237	0.274	0.465	-0.046	9.990	-0.526	-0.027	-0.087	0.047	0.234	-0.339
66	0.041	-0.213	-0.077	0.815	0.213	-0.613	9.990	0.512	0.459	-0.512	-0.234	0.418	-0.359
67	0.025	0.081	-0.553	-0.128	0.081	0.333	9.990	0.213	-0.342	0.213	-0.017	0.136	0.511
68	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990
69	-0.071	0.356	-0.699	-0.743	0.356	0.037	9.990	0.373	0.400	0.373	0.158	0.172	0.356
70	0.149	0.248	-0.031	-0.588	0.878	0.158	9.990	0.029	0.348	0.029	-0.113	0.462	0.440
71	0.535	-0.274	0.019	-0.191	-0.274	-0.229	9.990	-0.251	0.037	0.104	0.332	-0.037	0.098
72	-0.007	0.271	0.409	0.629	0.271	0.266	9.990	0.384	-0.027	0.384	0.047	0.234	-0.358
73	0.246	-0.511	0.553	0.623	-0.511	-0.333	9.990	-0.213	-0.550	-0.213	0.017	0.342	-0.511
74	-0.516	0.213	-0.077	0.409	-0.369	0.286	9.990	-0.087	0.158	-0.512	0.146	-0.159	0.213
75	0.007	0.139	-0.094	0.500	0.139	0.238	9.990	0.384	0.234	0.087	0.512	0.577	-0.007
76	0.217	0.271	0.094	-0.500	0.067	-0.363	9.990	-0.087	0.183	0.384	-0.487	0.234	-0.139
77	-0.247	-0.081	-0.052	-0.128	0.387	-0.363	9.990	-0.213	0.342	-0.659	-0.487	0.136	0.387
78	0.007	-0.183	-0.464	-0.332	0.430	0.057	9.990	-0.332	-0.309	0.146	-0.287	-0.116	0.027
79	1.000	0.227	0.046	0.346	0.007	-0.032	9.990	-0.461	0.306	-0.220	-0.158	-0.506	0.007
80	0.227	1.000	-0.094	0.098	0.139	-0.016	9.990	0.087	0.430	-0.384	-0.139	0.346	0.139
81	0.046	0.094	1.000	0.098	-0.094	-0.098	9.990	0.181	0.176	0.181	-0.266	0.158	-0.094
82	0.346	0.098	0.473	1.000	-0.629	0.233	9.990	0.251	0.452	-0.682	0.332	-0.452	-0.274
83	0.007	0.139	-0.094	-0.629	1.000	0.228	9.990	-0.384	0.027	0.087	-0.346	0.387	0.139
84	-0.052	-0.016	-0.098	0.223	0.228	1.000	9.990	-0.092	-0.198	-0.092	0.309	0.459	-0.016
85	9.990	9.990	9.990	9.990	9.990	9.990	1.000	9.990	9.990	9.990	9.990	9.990	9.990
86	-0.461	0.087	0.181	-0.251	-0.384	-0.092	9.990	1.000	-0.332	0.369	0.060	-0.146	0.526
87	0.346	0.430	0.176	0.452	0.027	0.158	9.990	-0.332	1.000	-0.545	0.309	0.097	0.430
88	-0.220	-0.384	0.181	-0.682	0.087	-0.092	9.990	0.369	-0.545	1.000	-0.248	0.332	-0.384
89	-0.158	-0.346	-0.266	0.332	-0.346	0.309	9.990	0.060	0.305	-0.248	1.000	0.305	-0.152
90	-0.506	0.387	-0.159	-0.158	0.387	0.459	9.990	0.146	0.097	0.332	0.305	1.000	-0.027
91	0.007	0.139	-0.094	-0.274	0.139	-0.016	9.990	0.526	0.430	-0.384	0.512	-0.027	1.000
92	-0.158	0.762	-0.266	0.071	0.512	0.588	9.990	0.060	-0.287	-0.248	0.464	0.713	-0.047
93	0.052	0.266	-0.325	-0.287	-0.356	-0.113	9.990	-0.738	-0.057	0.092	0.409	0.057	0.016
94	0.409	0.356	-0.325	-0.287	0.356	0.266	9.990	0.158	-0.159	0.415	-0.500	0.139	-0.113
95	-0.007	0.271	0.094	0.274	-0.139	-0.228	9.990	0.583	0.577	-0.526	0.346	0.027	0.641
96	-0.385	-0.692	-0.113	0.025	0.091	0.127	9.990	-0.206	-0.209	0.278	0.569	-0.007	0.305
97	-0.071	0.440	0.295	0.545	-0.158	0.396	9.990	-0.433	0.147	0.480	0.177	0.266	0.046
98	0.651	0.007	0.046	0.346	-0.436	0.209	9.990	-0.220	0.506	-0.220	-0.158	0.140	0.227
99	-0.253	0.113	0.459	0.151	0.103	0.468	9.990	-0.019	0.172	0.459	0.391	0.671	0.103
100	-0.113	-0.113	-0.387	-0.287	0.844	-0.027	9.990	-0.697	0.046	0.158	-0.232	0.409	0.356
101	-0.209	0.046	-0.509	0.229	0.016	0.191	9.990	-0.392	0.198	-0.392	0.011	0.521	0.016
102	-0.140	0.430	0.176	0.037	0.234	0.057	9.990	0.146	0.322	-0.332	-0.287	0.116	0.234
103	-0.655	-0.526	0.149	0.251	0.384	0.092	9.990	-0.369	-0.146	0.016	0.248	0.570	-0.526
104	0.217	0.455	-0.237	-0.098	0.067	0.155	9.990	0.369	0.384	-0.526	0.047	-0.183	0.271
105	-0.046	0.359	-0.179	-0.151	0.709	0.079	9.990	0.019	-0.172	-0.459	-0.071	0.172	0.437
106	-0.071	-0.220	-0.224	-0.743	0.356	0.373	9.990	0.373	-0.172	0.788	0.158	0.172	0.356
107	-0.071	-0.220	-0.224	-0.743	0.356	0.373	9.990	0.373	-0.172	0.788	0.158	0.172	0.356
108	-0.071	-0.220	-0.224	-0.743	0.356	0.373	9.990	0.373	-0.172	0.788	0.158	0.172	0.356
109	-0.071	-0.220	-0.224	-0.743	0.356	0.373	9.990	0.373	-0.172	0.788	0.158	0.172	0.356
110	-0.071	-0.220	-0.224	-0.743	0.356	0.373	9.990	0.373	-0.172	0.788	0.158	0.172	0.356
111	-0.246	0.081	-0.052	-0.623	0.511	0.363	9.990	0.699	-0.342	0.699	-0.172	0.342	0.511
112	-0.071	-0.220	-0.224	-0.743	0.356	0.373	9.990	0.373	-0.172	0.788	0.158	0.172	0.356
113	-0.246	0.081	-0.052	-0.623	0.511	0.363	9.990	0.699	-0.342	0.699	-0.172	0.342	0.511
114	-0.247	-0.387	-0.052	-0.623	0.511	0.363	9.990	0.213	-0.336	0.699	-0.017	0.342	0.081
115	-0.246	-0.387	-0.052	-0.623	0.511	0.363	9.990	0.213	0.136	0.699	-0.017	0.342	0.081
116	-0.266	0.087	0.181	-0.251	-0.384	-0.092	9.990	0.016	0.570	0.369	-0.248	0.332	-0.266

1	0.011	0.191	-0.027	0.266	0.127	0.396	0.209	0.206	-0.707	-0.376	-0.198	0.092	0.515
2	-0.158	0.209	-0.141	0.007	0.385	0.291	-0.256	0.253	-0.141	0.209	0.590	-0.220	0.227
3	0.163	0.565	-0.232	0.654	-0.087	0.459	-0.158	0.071	0.232	1.011	0.019	-0.528	0.047
4	-0.241	0.228	0.113	-0.067	-0.305	0.356	0.227	0.437	0.113	-0.016	0.888	-0.384	0.338
5	-0.158	0.228	-0.356	-0.067	-0.305	0.158	-0.227	-0.359	-0.121	-0.016	0.747	0.087	0.523
6	-0.158	0.443	-0.141	0.007	-0.298	0.291	-0.023	-0.044	0.113	0.209	0.846	-0.461	0.435
7	-0.158	0.037	-0.528	0.220	0.123	0.312	-0.071	-0.096	0.018	-0.571	-0.172	-0.373	-0.356
8	-0.017	0.139	-0.305	0.387	0.295	0.027	-0.246	-0.080	-0.305	-0.698	-0.342	-0.213	-0.081
9	0.163	0.409	-0.500	0.346	0.569	0.459	0.434	-0.342	0.087	0.011	-0.287	-0.060	-0.762
10	0.071	0.479	-0.389	0.437	0.318	0.545	0.315	-0.415	0.183	-0.266	-0.097	0.459	-0.809
11	0.487	0.139	-0.305	-0.081	-0.191	0.471	0.625	0.424	-0.305	0.139	0.550	-0.213	-0.081
12	-0.011	0.656	-0.707	0.515	-0.131	0.396	0.443	-0.479	0.266	0.191	0.299	-0.228	0.299
13	0.163	0.565	-0.718	0.346	-0.087	0.459	0.667	-0.342	0.087	0.409	0.305	-0.528	0.047
14	0.369	-0.131	0.217	-0.692	-0.295	0.252	-0.060	0.242	0.217	0.127	0.595	0.505	-0.124
15	-0.266	0.565	-0.232	0.654	-0.087	0.177	0.158	-0.342	0.468	0.409	0.305	-0.820	-0.241
16	-0.403	0.509	-0.840	0.586	-0.223	0.031	-0.046	-0.459	0.387	-0.098	0.158	-0.602	-0.094
17	0.309	-0.113	0.266	-0.459	0.127	-0.087	-0.335	0.206	0.592	0.191	0.299	0.364	-0.028
18	-0.146	0.266	-0.021	0.500	0.101	0.318	-0.369	-0.209	0.319	-0.613	0.418	-0.512	-0.369
19	0.017	-0.363	-0.662	-0.081	-0.191	0.027	-0.625	-0.080	-0.305	0.339	0.136	-0.213	-0.511
20	0.158	0.639	-0.113	-0.007	-0.170	0.333	-0.223	-0.253	0.141	0.335	0.306	-0.266	-0.435
21	0.071	0.479	-0.123	0.165	0.027	0.034	0.046	-0.415	0.183	0.106	0.422	0.019	-0.103
22	0.403	0.396	0.037	0.046	-0.172	0.615	-0.149	0.034	0.266	0.158	0.266	0.029	-0.158
23	-0.071	-0.029	0.491	-0.629	-0.389	-0.158	0.447	0.305	0.287	-0.229	-0.452	-0.251	-0.274
24	-0.146	-0.087	0.319	-0.369	0.415	-0.266	-0.441	-0.209	0.319	-0.613	0.176	-0.512	0.213
25	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
26	0.158	-0.571	0.018	-0.356	0.123	-0.266	0.486	0.096	0.018	-0.571	-0.172	-0.373	-0.356
27	-0.369	-0.127	0.031	0.124	0.295	-0.041	-0.170	-0.485	-0.217	-0.412	-0.172	0.613	-0.091
28	-0.087	0.027	0.060	-0.113	-0.266	0.194	0.553	0.123	0.198	-0.592	0.288	0.415	0.556
29	-0.017	-0.363	-0.305	-0.081	-0.191	-0.430	0.625	-0.080	0.194	-0.363	0.136	-0.699	-0.081
30	0.071	0.479	0.535	-0.359	0.027	0.034	0.549	-0.568	-0.613	-0.206	-0.097	0.019	-0.103
31	-0.087	0.592	0.060	0.356	-0.031	0.266	-0.141	-0.535	-0.198	-0.260	0.189	-0.337	-0.158
32	0.113	0.396	0.266	0.248	-0.252	0.253	-0.149	0.034	0.266	-0.087	-0.147	0.029	0.990
33	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
34	-0.158	0.037	0.528	-0.220	-0.123	-0.312	0.071	-0.613	-0.018	0.373	0.172	0.373	0.356
35	0.158	-0.037	0.018	0.220	0.123	-0.266	-0.071	0.096	0.018	-0.373	0.400	-0.373	0.220
36	0.487	0.139	0.194	0.387	-0.191	-0.430	-0.246	-0.080	0.194	-0.373	0.550	-0.213	0.387
37	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
38	0.158	0.443	0.346	0.227	0.170	0.071	0.475	0.253	-0.141	0.209	-0.087	0.266	0.435
39	0.158	-0.037	0.018	-0.356	0.123	0.312	-0.071	0.096	0.018	-0.571	-0.172	-0.373	0.220
40	-0.241	0.515	0.121	0.067	0.305	0.046	0.227	-0.165	-0.337	0.016	0.027	-0.087	0.465
41	-0.017	0.139	0.194	-0.081	0.295	-0.430	0.247	-0.424	-0.305	-0.363	-0.542	-0.213	-0.081
42	0.266	-0.098	-0.024	0.237	0.495	0.353	-0.046	0.500	0.387	-0.098	-0.176	0.111	0.237
43	0.266	-0.098	-0.356	0.237	0.113	0.353	0.288	0.500	0.554	0.325	-0.176	-0.149	0.237
44	0.266	-0.098	-0.356	0.237	0.113	0.353	0.288	0.500	0.554	0.325	-0.176	-0.149	0.237
45	0.266	-0.098	-0.356	0.237	0.113	0.353	0.288	0.500	0.554	0.325	-0.176	-0.149	0.237
46	0.266	-0.098	-0.356	0.237	0.113	0.353	0.288	0.500	0.554	0.325	-0.176	-0.149	0.237
47	0.266	-0.098	-0.356	0.237	0.113	0.353	0.288	0.500	0.554	0.325	-0.176	-0.149	0.237
48	0.266	-0.098	-0.356	0.237	0.113	0.353	0.288	0.500	0.554	0.325	-0.176	-0.149	0.237
49	0.266	-0.098	-0.356	0.237	0.113	0.353	0.288	0.500	0.554	0.325	-0.176	-0.149	0.237
50	0.266	-0.098	-0.356	0.237	0.113	0.353	0.288	0.500	0.554	0.325	-0.176	-0.149	0.237
51	0.266	-0.098	-0.356	0.237	0.113	0.353	0.288	0.500	0.554	0.325	-0.176	-0.149	0.237
52	0.266	-0.098	-0.356	0.237	0.113	0.353	0.288	0.500	0.554	0.325	-0.176	-0.149	0.237
53	0.266	-0.098	-0.356	0.237	0.113	0.353	0.288	0.500	0.554	0.325	-0.176	-0.149	0.237
54	0.266	-0.098	-0.356	0.237	0.113	0.353	0.288	0.500	0.554	0.325	-0.176	-0.149	0.237
55	0.266	-0.098	-0.356	0.237	0.113	0.353	0.288	0.500	0.554	0.325	-0.176	-0.149	0.237
56	0.266	-0.098	-0.356	0.237	0.113	0.353	0.288	0.500	0.554	0.325	-0.176	-0.149	0.237
57	0.266	-0.098	-0.356	0.237	0.113	0.353	0.288	0.500	0.554	0.325	-0.176	-0.149	0.237
58	0.266	-0.098	-0.356	0.237	0.113	0.353	0.288	0.500	0.554	0.325	-0.176	-0.149	0.237

1	105	106	107	108	109	110	111	112	113	114	115	116	117
2	-0.106	0.571	0.571	0.571	0.571	0.571	0.363	0.371	0.363	0.363	0.363	0.392	0.613
3	-0.315	0.071	0.071	0.071	0.071	0.071	-0.247	0.071	-0.247	-0.247	-0.247	-0.266	0.041
4	-0.071	0.158	0.158	0.158	0.158	0.158	-0.017	0.158	-0.017	-0.017	-0.017	-0.248	-0.146
5	0.596	0.220	0.220	0.220	0.220	0.220	0.387	0.220	0.387	0.387	0.387	-0.087	0.213
6	0.103	0.220	0.220	0.220	0.220	0.220	0.387	0.220	0.387	0.387	0.387	-0.087	0.213
7	0.589	0.071	0.071	0.071	0.071	0.071	0.246	0.071	0.246	0.246	0.246	-0.266	0.041
8	-0.096	0.667	0.667	0.667	0.667	0.667	0.555	0.667	0.555	0.555	0.555	0.573	0.459
9	-0.424	0.555	0.555	0.555	0.555	0.555	0.421	0.555	0.421	0.421	0.421	0.213	0.309
10	0.312	0.158	0.158	0.158	0.158	0.158	-0.017	0.158	-0.017	-0.017	-0.017	0.060	-0.146
11	0.415	0.096	0.096	0.096	0.096	0.096	0.080	0.096	0.080	0.080	0.080	-0.019	-0.209
12	0.080	0.555	0.555	0.555	0.555	0.555	0.421	0.555	0.421	0.421	0.421	0.213	0.309
13	0.479	0.037	0.037	0.037	0.037	0.037	-0.139	0.037	-0.139	-0.139	-0.139	-0.304	-0.266
14	0.342	0.158	0.158	0.158	0.158	0.158	0.139	0.158	0.139	0.139	0.139	-0.248	-0.146
15	-0.071	0.123	-0.123	-0.123	-0.123	-0.123	0.191	-0.123	0.191	-0.191	-0.191	-0.278	-0.101
16	0.256	0.158	0.158	0.158	0.158	0.158	-0.017	0.158	-0.017	-0.017	-0.017	-0.248	-0.146
17	0.106	0.037	0.037	0.037	0.037	0.037	0.052	0.037	0.052	0.052	0.052	-0.181	-0.077
18	-0.158	0.459	0.459	0.459	0.459	0.459	0.363	0.459	0.363	0.363	0.363	-0.364	-0.266
19	-0.424	0.555	0.555	0.555	0.555	0.555	0.309	0.555	0.309	0.309	0.309	0.087	0.189
20	0.253	0.071	-0.071	-0.071	-0.071	-0.071	0.421	-0.071	0.421	0.421	0.421	0.699	0.309
21	0.022	0.096	0.096	0.096	0.096	0.096	0.247	0.096	0.247	-0.247	-0.247	-0.461	-0.369
22	0.295	0.266	0.266	0.266	0.266	0.266	0.424	0.266	0.424	-0.080	-0.080	-0.019	-0.209
23	0.151	0.295	0.295	0.295	0.295	0.295	0.430	0.295	0.430	-0.027	-0.027	0.029	0.266
24	-0.158	0.835	0.835	0.835	0.835	0.835	0.128	0.835	0.128	0.128	0.128	0.512	0.409
25	0.990	0.990	0.990	0.990	0.990	0.990	0.783	0.990	0.783	0.783	0.783	0.633	0.633
26	-0.096	0.667	0.667	0.667	0.667	0.667	0.555	0.667	0.555	0.555	0.555	0.373	0.459
27	0.318	0.123	0.123	0.123	0.123	0.123	0.295	0.123	0.295	-0.191	-0.191	0.278	0.101
28	-0.389	0.528	0.528	0.528	0.528	0.528	0.662	0.528	0.662	0.662	0.662	0.697	0.595
29	0.080	0.555	0.555	0.555	0.555	0.555	0.421	0.555	0.421	0.421	0.421	0.309	0.309
30	-0.294	0.096	0.096	0.096	0.096	0.096	0.080	0.096	0.080	-0.080	-0.080	0.459	0.662
31	-0.389	-0.018	-0.018	-0.018	-0.018	-0.018	0.305	-0.018	0.305	-0.194	-0.194	-0.415	-0.319
32	-0.492	0.266	0.266	0.266	0.266	0.266	0.430	0.266	0.430	-0.027	-0.027	0.433	0.266
33	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
34	-0.613	0.667	0.667	0.667	0.667	0.667	0.555	0.667	0.555	-0.555	-0.555	-0.373	0.459
35	-0.424	0.555	0.555	0.555	0.555	0.555	0.878	0.555	0.878	0.555	0.555	0.373	0.459
36	-0.424	0.555	0.555	0.555	0.555	0.555	0.878	0.555	0.878	0.421	0.421	0.213	0.309
37	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
38	-0.690	0.071	0.071	0.071	0.071	0.071	0.246	0.071	0.246	0.246	0.246	0.461	0.369
39	-0.096	1.000	1.000	1.000	1.000	1.000	0.885	1.000	0.885	0.885	0.885	0.788	0.835
40	-0.165	0.356	0.356	0.356	0.356	0.356	0.081	0.356	0.081	0.081	0.081	0.087	0.369
41	-0.424	0.555	0.555	0.555	0.555	0.555	0.421	0.555	0.421	0.421	0.421	0.213	0.309
42	-0.179	0.699	0.699	0.699	0.699	0.699	0.553	0.699	0.553	0.553	0.553	0.602	0.317
43	0.256	0.699	0.699	0.699	0.699	0.699	0.553	0.699	0.553	0.553	0.553	0.612	0.317
44	0.256	0.699	0.699	0.699	0.699	0.699	0.553	0.699	0.553	0.553	0.553	0.612	0.317
45	0.256	0.699	0.699	0.699	0.699	0.699	0.553	0.699	0.553	0.553	0.553	0.612	0.317
46	0.256	0.699	0.699	0.699	0.699	0.699	0.553	0.699	0.553	0.553	0.553	0.612	0.317
47	0.151	0.743	0.743	0.743	0.743	0.743	0.623	0.743	0.623	0.623	0.623	0.682	0.409
48	0.071	-0.158	-0.158	-0.158	-0.158	-0.158	0.017	-0.158	0.017	-0.487	-0.487	-0.528	-0.234
49	0.359	0.220	0.220	0.220	0.220	0.220	0.158	0.220	0.158	0.017	0.017	0.060	-0.234
50	-0.106	-0.037	-0.037	-0.037	-0.037	-0.037	0.387	-0.037	0.387	0.387	0.387	0.384	0.213
51	0.654	0.528	0.528	0.528	0.528	0.528	0.139	0.528	0.139	0.139	0.139	0.092	-0.087
52	0.415	0.613	0.613	0.613	0.613	0.613	0.424	0.613	0.424	0.424	0.424	0.305	0.565
53	0.231	0.312	0.312	0.312	0.312	0.312	0.027	0.312	0.027	0.027	0.027	0.471	0.158
54	-0.151	0.743	0.743	0.743	0.743	0.743	0.623	0.743	0.623	0.623	0.623	0.682	0.409
55	-0.179	0.224	0.224	0.224	0.224	0.224	0.123	0.224	0.123	0.123	0.123	0.002	0.317
56	-0.485	0.123	0.123	0.123	0.123	0.123	-0.295	0.123	-0.295	-0.295	-0.295	-0.468	-0.468
57	0.318	-0.123	-0.123	-0.123	-0.123	-0.123	-0.295	-0.123	-0.295	-0.295	-0.295	0.206	0.468
58	0.318	-0.123	-0.123	-0.123	-0.123	-0.123	-0.295	-0.123	-0.295	-0.295	-0.295	0.206	0.468

	105	106	107	108	109	110	111	112	113	114	115	116	117
59	-0.391	0.158	0.158	0.158	0.150	0.158	0.487	0.158	0.487	-0.017	0.487	0.060	-0.146
60	-0.097	0.172	0.172	0.172	0.172	0.172	0.342	0.172	0.342	0.342	0.342	0.545	0.459
61	-0.071	0.158	0.158	0.158	0.158	0.158	0.487	0.158	0.487	0.487	-0.017	-0.248	-0.146
62	-0.106	-0.037	-0.037	-0.037	-0.037	-0.037	0.139	-0.037	0.139	0.139	0.139	0.364	0.266
63	0.046	0.071	0.071	0.071	0.071	0.071	-0.247	0.071	-0.247	0.246	0.246	0.451	0.369
64	-0.071	-0.400	-0.400	-0.400	-0.400	-0.400	-0.136	-0.400	-0.136	-0.136	-0.550	-0.146	0.158
65	0.359	0.220	0.220	0.220	0.220	0.220	0.387	0.220	0.387	-0.081	0.387	-0.087	-0.369
66	-0.158	-0.835	-0.835	-0.835	-0.835	-0.835	-0.783	-0.835	-0.783	-0.783	-0.783	-0.512	-0.633
67	0.080	0.555	0.555	0.555	0.555	0.555	0.421	0.555	0.421	0.421	0.421	0.213	0.309
68	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990
69	-0.613	0.667	0.667	0.667	0.667	0.667	0.555	0.667	0.555	0.555	0.555	0.373	0.459
70	0.231	0.312	0.312	0.312	0.312	0.312	0.471	0.312	0.471	0.471	0.027	0.029	0.318
71	-0.390	-0.295	-0.295	-0.295	-0.295	-0.295	-0.623	-0.295	-0.623	-0.128	-0.128	0.104	0.000
72	0.103	-0.356	-0.356	-0.356	-0.356	-0.356	-0.081	-0.356	-0.081	-0.081	-0.511	0.213	0.087
73	0.424	-0.555	-0.555	-0.555	-0.555	-0.555	-0.421	-0.555	-0.421	-0.421	-0.421	-0.213	-0.309
74	0.158	-0.459	-0.459	-0.459	-0.459	-0.459	-0.309	-0.459	-0.309	-0.783	-0.309	-0.087	-0.189
75	-0.103	-0.220	-0.220	-0.220	-0.220	-0.220	-0.387	-0.220	-0.387	0.081	0.081	-0.384	-0.500
76	-0.709	0.220	0.220	0.220	0.220	0.220	0.387	0.220	0.387	0.387	0.387	0.583	0.500
77	0.734	-0.555	-0.555	-0.555	-0.555	-0.555	-0.421	-0.555	-0.421	-0.421	-0.421	-0.213	-0.309
78	-0.172	0.400	0.400	0.400	0.400	0.400	0.136	0.400	0.136	0.136	0.136	0.146	-0.158
79	-0.046	-0.071	-0.071	-0.071	-0.071	-0.071	-0.246	-0.071	-0.246	0.247	-0.246	0.266	0.516
80	-0.359	-0.220	-0.220	-0.220	-0.220	-0.220	0.081	-0.220	0.081	-0.387	-0.387	0.087	0.369
81	0.179	-0.524	-0.524	-0.524	-0.524	-0.524	-0.052	-0.524	-0.052	-0.052	-0.052	0.181	0.077
82	0.151	-0.743	-0.743	-0.743	-0.743	-0.743	-0.623	-0.743	-0.623	-0.841	-0.623	-0.251	-0.409
83	0.709	0.356	0.356	0.356	0.356	0.356	0.511	0.356	0.511	0.511	0.081	-0.384	-0.213
84	0.479	0.571	0.571	0.571	0.571	0.571	0.363	0.571	0.363	0.363	0.363	0.092	0.087
85	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990
86	0.019	0.373	0.373	0.373	0.373	0.373	0.699	0.373	0.699	0.213	0.213	0.016	0.087
87	-0.172	-0.172	-0.172	-0.172	-0.172	-0.172	-0.342	-0.172	-0.342	-0.342	0.136	0.570	0.418
88	-0.459	0.788	0.788	0.788	0.788	0.788	0.699	0.788	0.699	0.878	0.699	0.369	0.512
89	-0.071	0.158	0.158	0.158	0.158	0.158	0.017	0.158	0.017	-0.017	-0.017	-0.248	-0.146
90	0.172	0.172	0.172	0.172	0.172	0.172	0.342	0.172	0.342	0.342	0.342	0.332	0.158
91	0.437	0.356	0.356	0.356	0.356	0.356	0.511	0.356	0.511	0.081	0.081	-0.384	-0.213
92	0.342	0.158	0.158	0.158	0.158	0.158	0.487	0.158	0.487	-0.017	-0.017	0.248	-0.146
93	-0.106	-0.037	-0.037	-0.037	-0.037	-0.037	0.139	-0.037	0.139	-0.017	-0.017	0.092	0.566
94	-0.183	0.018	0.018	0.018	0.018	0.018	0.194	0.018	0.194	0.194	0.305	0.158	0.319
95	-0.437	-0.356	-0.356	-0.356	-0.356	-0.356	-0.081	-0.356	-0.081	-0.511	-0.081	-0.526	-0.613
96	-0.027	0.123	0.123	0.123	0.123	0.123	-0.191	0.123	-0.191	0.295	0.295	-0.206	-0.468
97	0.231	0.312	0.312	0.312	0.312	0.312	0.421	0.312	0.421	0.027	0.027	0.029	0.318
98	-0.046	-0.071	-0.071	-0.071	-0.071	-0.071	-0.246	-0.071	-0.246	0.247	0.247	0.655	0.516
99	0.415	0.096	0.096	0.096	0.096	0.096	0.080	0.096	0.080	0.424	-0.080	-0.309	-0.209
100	0.613	0.018	0.018	0.018	0.018	0.018	0.194	0.018	0.194	0.194	0.363	-0.328	-0.565
101	-0.106	-0.571	-0.571	-0.571	-0.571	-0.571	-0.363	-0.571	-0.363	-0.163	-0.363	-0.332	-0.613
102	0.379	-0.172	-0.172	-0.172	-0.172	-0.172	0.136	-0.172	0.136	-0.342	-0.342	-0.332	-0.158
103	-0.309	-0.373	-0.373	-0.373	-0.373	-0.373	-0.213	-0.373	-0.213	-0.213	-0.213	0.016	-0.087
104	-0.165	0.220	0.220	0.220	0.220	0.220	0.387	0.220	0.387	-0.081	-0.081	0.384	0.500
105	1.000	-0.096	-0.096	-0.096	-0.096	-0.096	0.080	-0.096	0.080	0.424	-0.424	-0.459	-0.158
106	-0.096	1.000	1.000	1.000	1.000	1.000	0.885	1.000	0.885	0.885	0.885	0.788	0.835
107	-0.096	1.000	1.000	1.000	1.000	1.000	0.885	1.000	0.885	0.885	0.885	0.788	0.835
108	-0.096	1.000	1.000	1.000	1.000	1.000	0.885	1.000	0.885	0.885	0.885	0.788	0.835
109	-0.096	1.000	1.000	1.000	1.000	1.000	0.885	1.000	0.885	0.885	0.885	0.788	0.835
110	-0.096	1.000	1.000	1.000	1.000	1.000	0.885	1.000	0.885	0.885	0.885	0.788	0.835
111	-0.080	0.885	0.885	0.885	0.885	0.885	1.000	0.885	1.000	0.878	0.878	0.699	0.783
112	-0.096	1.000	1.000	1.000	1.000	1.000	0.885	1.000	0.885	0.885	0.885	0.788	0.835
113	-0.080	0.885	0.885	0.885	0.885	0.885	1.000	0.885	1.000	0.878	0.878	0.699	0.783
114	-0.080	0.885	0.885	0.885	0.885	0.885	1.000	0.885	1.000	0.878	0.878	0.699	0.783
115	-0.424	0.885	0.885	0.885	0.885	0.885	0.699	0.885	0.699	0.699	0.699	1.000	0.932
116	-0.459	0.788	0.788	0.788	0.788	0.788	0.699	0.788	0.699	0.699	0.699	1.000	0.932

	105	106	107	108	109	110	111	112	113	114	115	116	117
117	-0.158	0.835	0.835	0.835	0.835	0.835	0.783	0.835	0.783	0.783	0.783	0.932	1.000
118	-0.342	0.656	0.656	0.656	0.656	0.656	0.487	0.656	0.487	0.487	0.487	0.060	0.234
119	0.080	0.885	0.885	0.885	0.885	0.885	0.885	0.885	0.878	0.878	0.878	0.699	0.783
120	-0.342	0.656	0.656	0.656	0.656	0.656	0.487	0.656	0.487	0.487	0.487	0.060	0.234
121	-0.096	1.000	1.000	1.000	1.000	1.000	0.885	1.000	0.885	0.885	0.885	0.788	0.835
122	0.080	0.885	0.885	0.885	0.885	0.885	0.878	0.885	0.878	0.878	0.878	0.699	0.783
123	-0.080	0.885	0.885	0.885	0.885	0.885	0.878	0.885	0.878	0.878	0.878	0.699	0.783
124	-0.424	0.835	0.835	0.835	0.835	0.835	0.783	0.835	0.783	0.783	0.783	0.512	0.633
125	0.209	0.835	0.835	0.835	0.835	0.835	0.783	0.835	0.783	0.783	0.783	0.699	0.783
126	-0.096	1.000	1.000	1.000	1.000	1.000	0.885	1.000	0.885	0.885	0.885	0.788	0.835
127	-0.096	1.000	1.000	1.000	1.000	1.000	0.885	1.000	0.885	0.885	0.885	0.788	0.835
128	-0.096	1.000	1.000	1.000	1.000	1.000	0.885	1.000	0.885	0.885	0.885	0.788	0.835
129	-0.080	0.835	0.835	0.835	0.835	0.835	0.783	0.835	0.783	0.783	0.783	0.512	0.633
130	-0.158	0.835	0.835	0.835	0.835	0.835	0.783	0.835	0.783	0.783	0.783	0.512	0.633
131	0.080	0.885	0.885	0.885	0.885	0.885	0.878	0.885	0.878	0.878	0.878	0.699	0.783
132	-0.096	1.000	1.000	1.000	1.000	1.000	0.885	1.000	0.885	0.885	0.885	0.788	0.835
133	-0.096	1.000	1.000	1.000	1.000	1.000	0.885	1.000	0.885	0.885	0.885	0.788	0.835
134	0.209	0.835	0.835	0.835	0.835	0.835	0.783	0.835	0.783	0.783	0.783	0.512	0.633
135	-0.096	1.000	1.000	1.000	1.000	1.000	0.885	1.000	0.885	0.885	0.885	0.788	0.835
136	-0.096	1.000	1.000	1.000	1.000	1.000	0.885	1.000	0.885	0.885	0.885	0.788	0.835
137	0.459	0.788	0.788	0.788	0.788	0.788	0.699	0.788	0.699	0.699	0.699	0.369	0.512
138	0.459	0.788	0.788	0.788	0.788	0.788	0.699	0.788	0.699	0.699	0.699	0.369	0.512
139	-0.424	0.555	0.555	0.555	0.555	0.555	0.421	0.555	0.421	0.421	0.421	0.092	0.317
140	-0.183	0.618	0.618	0.618	0.618	0.618	0.421	0.618	0.421	0.421	0.421	0.092	0.317
141	0.080	0.555	0.555	0.555	0.555	0.555	0.421	0.555	0.421	0.421	0.421	0.092	0.317
142	-0.183	0.618	0.618	0.618	0.618	0.618	0.421	0.618	0.421	0.421	0.421	0.092	0.317
143	0.459	0.788	0.788	0.788	0.788	0.788	0.699	0.788	0.699	0.699	0.699	0.369	0.512
144	0.459	0.788	0.788	0.788	0.788	0.788	0.699	0.788	0.699	0.699	0.699	0.369	0.512
145	0.209	0.835	0.835	0.835	0.835	0.835	0.783	0.835	0.783	0.783	0.783	0.512	0.633
146	0.080	0.885	0.885	0.885	0.885	0.885	0.878	0.885	0.878	0.878	0.878	0.699	0.783
147	-0.151	0.295	0.295	0.295	0.295	0.295	0.623	0.295	0.623	0.623	0.623	0.052	0.181
148	-0.179	0.224	0.224	0.224	0.224	0.224	0.052	0.224	0.052	0.052	0.052	0.369	0.512
149	-0.459	0.743	0.743	0.743	0.743	0.743	0.623	0.743	0.623	0.623	0.623	0.016	0.087
150	-0.151	0.373	0.373	0.373	0.373	0.373	0.213	0.373	0.213	0.213	0.213	0.016	0.087
151	-0.459	0.743	0.743	0.743	0.743	0.743	0.623	0.743	0.623	0.623	0.623	0.016	0.087
152	-0.151	0.373	0.373	0.373	0.373	0.373	0.213	0.373	0.213	0.213	0.213	0.016	0.087
153	-0.459	0.743	0.743	0.743	0.743	0.743	0.623	0.743	0.623	0.623	0.623	0.016	0.087
154	-0.151	0.373	0.373	0.373	0.373	0.373	0.213	0.373	0.213	0.213	0.213	0.016	0.087
155	-0.459	0.743	0.743	0.743	0.743	0.743	0.623	0.743	0.623	0.623	0.623	0.016	0.087
156	-0.151	0.373	0.373	0.373	0.373	0.373	0.213	0.373	0.213	0.213	0.213	0.016	0.087
157	-0.459	0.743	0.743	0.743	0.743	0.743	0.623	0.743	0.623	0.623	0.623	0.016	0.087
158	-0.151	0.373	0.373	0.373	0.373	0.373	0.213	0.373	0.213	0.213	0.213	0.016	0.087
159	-0.459	0.743	0.743	0.743	0.743	0.743	0.623	0.743	0.623	0.623	0.623	0.016	0.087
160	-0.151	0.373	0.373	0.373	0.373	0.373	0.213	0.373	0.213	0.213	0.213	0.016	0.087
161	-0.459	0.743	0.743	0.743	0.743	0.743	0.623	0.743	0.623	0.623	0.623	0.016	0.087
162	-0.151	0.373	0.373	0.373	0.373	0.373	0.213	0.373	0.213	0.213	0.213	0.016	0.087
163	-0.459	0.743	0.743	0.743	0.743	0.743	0.623	0.743	0.623	0.623	0.623	0.016	0.087
164	-0.151	0.373	0.373	0.373	0.373	0.373	0.213	0.373	0.213	0.213	0.213	0.016	0.087
165	-0.459	0.743	0.743	0.743	0.743	0.743	0.623	0.743	0.623	0.623	0.623	0.016	0.087
166	-0.151	0.373	0.373	0.373	0.373	0.373	0.213	0.373	0.213	0.213	0.213	0.016	0.087
167	-0.459	0.743	0.743	0.743	0.743	0.743	0.623	0.743	0.623	0.623	0.623	0.016	0.087

	116	119	120	121	122	123	124	125	126	127	128	129	130
1	0.309	0.698	0.309	0.371	0.698	0.698	0.698	0.613	0.698	0.571	0.571	0.698	0.087
2	0.158	0.246	0.158	0.071	0.246	0.246	-0.247	0.369	-0.247	0.071	0.071	0.246	0.041
3	0.163	0.487	0.163	0.158	-0.017	-0.017	0.487	0.234	-0.017	0.158	0.158	0.487	-0.146
4	0.047	0.387	0.047	0.220	0.387	0.387	-0.081	0.500	-0.081	0.220	0.220	0.387	0.213
5	0.346	0.337	0.346	0.220	-0.081	-0.081	0.387	0.500	0.387	0.220	0.220	-0.081	0.213
6	0.521	0.246	0.521	0.071	0.246	0.246	0.346	0.369	0.346	0.071	0.071	-0.227	0.041
7	0.656	0.555	0.656	0.667	0.555	0.555	0.555	0.459	0.555	0.667	0.667	0.555	0.459
8	0.487	0.421	0.487	0.555	0.421	0.421	0.555	0.309	0.421	0.555	0.555	0.421	0.309
9	0.715	0.487	0.715	0.158	0.487	0.487	0.017	0.234	-0.017	0.158	0.158	-0.017	-0.146
10	0.639	0.424	0.639	0.096	-0.080	-0.080	-0.080	0.158	-0.080	0.096	0.096	0.421	0.309
11	0.487	0.421	0.487	0.555	0.421	0.421	0.555	0.087	0.421	0.555	0.555	0.421	-0.266
12	0.568	-0.139	0.568	0.037	-0.139	-0.139	0.363	0.234	0.363	0.037	0.037	-0.139	-0.146
13	0.715	-0.017	0.715	0.158	-0.017	-0.017	0.487	0.234	0.487	0.158	0.158	-0.017	-0.101
14	-0.224	-0.295	-0.224	-0.123	-0.295	-0.295	-0.295	0.468	-0.295	-0.123	-0.123	-0.295	0.234
15	0.163	-0.017	0.163	0.158	-0.017	-0.017	0.487	0.146	0.487	0.158	0.158	-0.017	-0.087
16	0.266	0.052	0.266	0.224	0.052	0.052	0.553	-0.077	0.553	0.224	0.224	0.052	0.234
17	-0.565	-0.139	-0.565	0.037	-0.139	-0.139	-0.139	0.087	-0.139	0.037	0.037	-0.139	0.087
18	0.234	0.309	0.234	0.459	0.309	0.309	0.309	0.189	0.309	0.459	0.459	0.309	0.633
19	0.487	0.421	0.487	0.555	0.421	0.421	0.421	0.309	0.421	0.555	0.555	0.421	0.309
20	0.434	0.247	0.434	-0.071	-0.246	-0.246	0.060	0.158	0.247	-0.071	-0.071	0.247	0.158
21	0.071	0.424	0.071	0.096	-0.080	-0.080	0.430	0.539	0.430	0.266	0.266	0.430	0.539
22	0.403	-0.027	0.403	0.266	-0.027	-0.027	0.430	0.000	0.430	0.266	0.266	0.430	0.000
23	-0.332	0.128	-0.332	0.295	0.128	0.128	0.783	0.633	0.128	0.295	0.295	0.633	0.930
24	0.234	0.783	0.234	0.835	0.783	0.783	0.990	0.990	0.990	0.990	0.990	0.990	0.990
25	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.459	0.990	0.990	0.990	0.990	0.459
26	0.158	0.555	0.158	0.667	0.555	0.555	0.555	0.469	0.555	0.667	0.667	0.555	0.158
27	0.224	0.295	0.224	0.123	0.295	0.295	0.295	0.021	0.295	0.123	0.123	0.295	0.565
28	0.305	0.305	0.305	0.528	0.305	0.305	0.662	0.021	0.662	0.528	0.528	0.305	0.309
29	0.421	0.421	0.421	0.555	0.421	0.421	0.421	0.309	0.421	0.555	0.555	0.421	0.158
30	0.391	0.424	0.391	0.096	-0.080	-0.080	-0.080	0.209	0.096	0.096	0.096	0.209	0.096
31	0.500	0.430	0.500	0.266	-0.194	-0.194	-0.194	0.319	0.430	-0.194	-0.194	0.430	0.500
32	0.113	0.430	0.113	0.990	0.990	0.990	0.990	0.266	0.990	0.430	0.430	0.990	0.113
33	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.459	0.990	0.990	0.990	0.990	0.459
34	0.158	0.555	0.158	0.667	0.555	0.555	0.555	0.459	0.555	0.667	0.667	0.555	0.158
35	0.158	0.555	0.158	0.667	0.555	0.555	0.555	0.459	0.555	0.667	0.667	0.555	0.158
36	0.017	0.421	0.017	0.555	0.421	0.421	0.421	0.309	0.421	0.555	0.555	0.421	0.309
37	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.459	0.990	0.990	0.990	0.990	0.459
38	0.158	0.555	0.158	0.667	0.555	0.555	0.555	0.459	0.555	0.667	0.667	0.555	0.158
39	0.656	0.885	0.656	1.000	0.885	0.885	0.885	0.041	0.885	1.000	1.000	0.885	0.041
40	0.241	0.511	0.241	0.356	0.511	0.511	0.081	0.369	0.511	0.356	0.356	0.081	0.369
41	0.017	0.421	0.017	0.555	0.421	0.421	0.421	0.309	0.421	0.555	0.555	0.421	0.309
42	0.178	0.553	0.178	0.699	0.553	0.553	0.553	0.762	0.553	0.699	0.699	0.553	0.317
43	0.178	0.553	0.178	0.699	0.553	0.553	0.553	0.762	0.553	0.699	0.699	0.553	0.317
44	0.178	0.553	0.178	0.699	0.553	0.553	0.553	0.762	0.553	0.699	0.699	0.553	0.317
45	0.178	0.553	0.178	0.699	0.553	0.553	0.553	0.762	0.553	0.699	0.699	0.553	0.317
46	0.178	0.553	0.178	0.699	0.553	0.553	0.553	0.762	0.553	0.699	0.699	0.553	0.317
47	0.071	0.623	0.071	0.743	0.623	0.623	0.623	0.815	0.623	0.743	0.743	0.815	0.419
48	0.464	0.017	0.464	0.158	0.017	0.017	0.017	0.146	0.017	0.158	0.158	0.017	0.146
49	0.266	0.017	0.266	-0.158	0.017	0.017	0.017	0.234	0.017	-0.158	-0.158	0.017	0.146
50	0.346	0.387	0.346	0.220	0.387	0.387	-0.081	0.369	-0.081	0.220	0.220	0.387	0.266
51	0.565	0.139	0.565	0.037	0.139	0.139	0.139	0.087	0.139	0.037	0.037	0.087	0.037
52	0.232	0.305	0.232	0.623	0.305	0.305	0.305	0.565	0.305	0.623	0.623	0.565	0.081
53	0.391	0.424	0.391	0.613	0.424	0.424	0.424	0.662	0.424	0.613	0.613	0.662	0.081
54	0.113	0.471	0.113	0.312	0.471	0.471	0.027	0.318	0.471	0.312	0.312	0.027	0.577
55	0.385	0.623	0.385	0.743	0.623	0.623	0.623	0.815	0.623	0.743	0.743	0.815	0.419
56	0.403	0.052	0.403	0.224	0.052	0.052	0.052	0.077	0.052	0.224	0.224	0.077	0.077
57	0.224	0.052	0.224	0.123	0.052	0.052	0.052	0.415	0.052	0.123	0.123	0.415	0.077
58	0.224	0.295	0.224	0.123	0.295	0.295	0.295	0.415	0.295	0.123	0.123	0.415	0.077

	118	119	120	121	122	123	124	125	126	127	128	129	130
59	-0.163	-0.017	0.163	0.158	-0.017	-0.017	0.487	0.234	0.487	0.158	0.158	-0.017	0.234
60	-0.305	-0.136	-0.305	0.172	0.342	0.342	-0.017	0.158	-0.136	0.172	0.172	0.342	0.459
61	-0.464	-0.017	-0.464	0.158	-0.017	-0.017	-0.017	0.144	-0.017	0.158	0.158	-0.017	0.146
62	-0.011	0.139	0.011	-0.037	-0.033	-0.033	-0.363	0.087	-0.363	-0.037	-0.037	0.139	-0.087
63	0.021	0.246	0.021	0.071	-0.247	-0.247	-0.246	-0.246	0.246	0.071	-0.071	0.247	0.041
64	-0.305	0.136	-0.305	-0.400	-0.136	-0.136	-0.550	-0.414	-0.550	-0.400	-0.400	-0.136	-0.418
65	-0.654	0.387	0.654	0.220	-0.081	-0.081	0.387	0.213	0.387	0.220	0.220	0.387	0.213
66	-0.234	-0.783	-0.234	-0.835	-0.783	-0.783	-0.783	-0.633	-0.783	-0.835	-0.835	-0.783	-0.633
67	0.487	0.421	0.487	0.555	0.421	0.421	0.421	0.309	0.421	0.555	0.555	0.421	0.309
68	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990
69	0.158	0.555	0.158	0.667	0.555	0.555	0.555	0.459	0.555	0.667	0.667	0.555	0.459
70	0.177	0.027	0.177	0.312	0.471	0.471	0.471	0.577	0.471	0.312	0.312	0.027	0.577
71	-0.385	-0.623	-0.385	-0.295	-0.128	-0.128	-0.128	-0.815	-0.128	-0.295	-0.295	-0.128	-0.815
72	0.346	-0.081	0.346	-0.356	-0.081	-0.081	-0.081	0.213	-0.081	-0.356	-0.356	-0.081	-0.613
73	0.017	-0.421	0.017	-0.555	-0.421	-0.421	-0.421	-0.783	-0.421	-0.555	-0.555	-0.421	-0.783
74	0.146	0.309	0.146	-0.459	-0.309	-0.309	-0.309	-0.189	-0.309	-0.459	-0.459	-0.309	-0.189
75	0.241	-0.387	0.241	-0.220	0.081	0.081	0.081	-0.213	0.081	-0.220	-0.220	0.081	-0.500
76	-0.241	-0.081	-0.241	0.220	0.387	0.387	0.387	0.213	0.387	0.220	0.220	0.387	0.500
77	0.287	0.421	0.287	-0.555	-0.421	-0.421	-0.421	-0.309	-0.421	-0.555	-0.555	-0.421	-0.309
78	-0.287	-0.136	-0.287	0.400	0.136	0.136	0.136	-0.158	0.136	0.400	0.400	0.136	0.400
79	-0.158	-0.246	-0.158	-0.071	-0.246	-0.246	-0.247	-0.369	-0.247	-0.071	-0.071	-0.246	-0.369
80	0.241	0.387	0.241	-0.220	0.387	0.387	0.387	0.081	0.387	-0.220	-0.220	0.387	-0.081
81	0.266	-0.052	0.266	-0.224	-0.052	-0.052	-0.553	0.077	-0.553	-0.224	-0.224	-0.052	-0.762
82	0.071	-0.623	0.071	-0.743	-0.623	-0.623	-0.623	-0.409	-0.623	-0.743	-0.743	-0.623	-0.901
83	-0.047	0.081	-0.047	0.356	0.081	0.081	0.081	0.613	0.081	0.356	0.356	0.081	0.613
84	0.568	0.363	0.568	0.571	0.698	0.698	0.363	0.778	0.571	0.698	0.571	0.363	0.087
85	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990
86	-0.248	0.213	-0.248	0.373	0.699	0.699	0.213	0.087	0.373	0.699	0.373	0.213	0.087
87	0.019	-0.342	0.019	-0.172	0.136	0.136	0.136	0.418	-0.172	0.136	0.172	0.136	-0.418
88	0.060	0.699	0.060	0.788	0.699	0.699	0.699	0.512	0.699	0.788	0.788	0.699	0.512
89	0.163	-0.017	0.163	0.158	0.487	0.487	0.487	-0.146	0.487	0.158	0.158	0.487	-0.146
90	0.287	-0.136	0.287	0.172	0.342	0.342	-0.136	0.459	-0.136	0.172	0.172	0.342	0.459
91	0.241	0.081	0.241	0.356	0.081	0.081	0.511	0.369	0.081	0.356	0.356	0.081	0.369
92	0.163	-0.017	0.163	0.158	-0.017	-0.017	-0.017	0.712	-0.017	0.158	0.158	-0.017	0.234
93	0.409	0.139	0.409	-0.037	-0.363	-0.363	0.139	0.319	-0.037	-0.363	-0.363	0.139	0.319
94	-0.232	0.194	-0.232	0.018	0.194	0.194	-0.305	-0.369	0.018	0.194	0.194	-0.305	-0.369
95	-0.241	-0.511	-0.241	0.123	0.295	0.295	-0.191	0.101	0.123	0.295	0.123	0.295	0.101
96	-0.087	0.295	-0.087	0.123	0.027	0.027	0.471	0.577	0.123	0.027	0.312	0.471	0.577
97	0.800	0.471	0.800	-0.071	0.027	0.027	0.471	0.577	0.071	0.027	0.312	0.471	0.577
98	0.158	-0.246	0.158	0.096	0.424	0.424	0.247	-0.041	0.096	0.424	0.096	0.246	0.209
99	-0.342	-0.080	-0.342	0.018	-0.305	-0.305	-0.080	0.662	-0.018	0.018	0.018	-0.305	0.319
100	-0.232	-0.305	-0.232	-0.172	-0.363	-0.363	-0.363	-0.087	-0.172	-0.363	-0.363	-0.305	-0.087
101	-0.309	-0.698	-0.309	-0.571	-0.342	-0.342	-0.342	0.418	-0.571	-0.342	-0.342	-0.698	-0.418
102	-0.287	-0.342	-0.287	-0.172	-0.342	-0.342	-0.342	0.418	-0.172	-0.342	-0.342	-0.698	-0.418
103	-0.060	-0.213	-0.060	-0.373	-0.213	-0.213	-0.213	0.500	-0.373	-0.213	-0.213	-0.060	0.213
104	-0.241	-0.081	-0.241	0.387	0.387	0.387	0.387	0.500	0.387	0.387	0.387	-0.081	0.213
105	0.342	0.080	0.342	-0.096	0.080	0.080	-0.041	0.209	-0.096	0.080	0.080	0.096	0.158
106	0.656	0.885	0.656	1.000	0.885	0.885	0.885	0.835	0.885	1.000	1.000	0.885	0.835
107	0.656	0.885	0.656	1.000	0.885	0.885	0.885	0.835	0.885	1.000	1.000	0.885	0.835
108	0.656	0.885	0.656	1.000	0.885	0.885	0.885	0.835	0.885	1.000	1.000	0.885	0.835
109	0.656	0.885	0.656	1.000	0.885	0.885	0.885	0.835	0.885	1.000	1.000	0.885	0.835
110	0.487	0.878	0.487	0.885	0.878	0.878	0.878	0.885	0.878	0.885	0.885	0.878	0.783
111	0.487	0.878	0.487	0.885	0.878	0.878	0.878	0.885	0.878	0.885	0.885	0.878	0.783
112	0.487	0.878	0.487	0.885	0.878	0.878	0.878	0.885	0.878	0.885	0.885	0.878	0.783
113	0.487	0.878	0.487	0.885	0.878	0.878	0.878	0.885	0.878	0.885	0.885	0.878	0.783
114	0.487	0.878	0.487	0.885	0.878	0.878	0.878	0.885	0.878	0.885	0.885	0.878	0.783
115	0.487	0.878	0.487	0.885	0.878	0.878	0.878	0.885	0.878	0.885	0.885	0.878	0.783
116	0.060	0.699	0.060	0.788	0.699	0.699	0.699	0.512	0.699	0.788	0.788	0.699	0.512

1	0.363	0.571	0.613	0.571	0.371	0.392	0.325	0.139	0.027	0.139	0.266	0.113
2	0.246	0.071	0.369	0.071	0.071	0.220	-0.288	0.246	0.141	-0.247	-0.346	-0.209
3	-0.017	0.158	-0.146	0.158	0.158	-0.248	0.266	0.487	0.500	-0.017	-0.087	-0.031
4	0.387	0.220	0.500	0.220	0.220	-0.087	0.237	0.387	0.356	-0.081	0.121	0.266
5	0.387	0.220	0.500	0.220	0.220	-0.087	0.237	0.387	-0.113	-0.081	0.356	0.016
6	0.246	0.071	0.369	0.071	0.071	0.220	0.044	0.246	-0.113	-0.247	0.141	0.052
7	0.555	0.667	0.459	0.667	0.667	0.373	0.224	0.555	-0.018	0.555	0.528	0.037
8	0.421	0.555	0.309	0.555	0.555	0.213	0.052	0.421	-0.194	0.421	0.305	-0.139
9	-0.017	0.158	-0.146	0.158	0.158	-0.248	-0.178	-0.017	0.232	-0.017	-0.468	-0.409
10	-0.080	0.096	-0.209	0.096	0.096	-0.309	0.256	-0.080	0.123	-0.080	-0.535	-0.479
11	0.421	0.555	0.309	0.555	0.555	0.213	0.052	0.421	0.305	0.421	-0.194	-0.139
12	-0.139	0.037	-0.266	0.037	0.037	-0.092	-0.325	0.363	-0.266	-0.139	0.027	-0.539
13	-0.017	0.158	-0.146	0.158	0.158	-0.248	-0.178	0.487	-0.087	-0.017	0.232	-0.409
14	0.191	-0.123	0.468	-0.123	-0.123	-0.278	-0.113	0.191	0.031	0.588	-0.217	0.131
15	-0.017	0.158	-0.146	0.158	0.158	-0.248	-0.178	0.487	0.232	-0.017	0.232	-0.409
16	-0.052	0.224	-0.077	0.224	0.224	0.149	-0.087	0.553	0.387	0.052	-0.387	-0.325
17	-0.139	0.037	-0.266	0.037	0.037	-0.092	0.098	0.363	-0.266	0.698	-0.266	-0.113
18	0.309	0.459	0.189	0.459	0.459	-0.087	-0.077	0.309	0.021	0.309	0.565	-0.266
19	0.421	0.555	0.309	0.555	0.555	0.213	0.052	0.421	0.305	0.421	-0.194	-0.139
20	-0.246	-0.071	-0.369	-0.071	-0.071	-0.220	-0.046	-0.246	0.113	-0.246	-0.141	-0.052
21	-0.080	0.096	-0.209	0.096	0.096	-0.309	0.179	-0.080	0.389	0.424	0.123	-0.106
22	0.430	0.266	0.539	0.266	0.266	-0.480	-0.667	-0.471	-0.037	-0.027	-0.037	-0.158
23	0.128	0.295	0.000	0.295	0.295	0.251	0.473	0.128	0.158	0.623	0.158	0.229
24	0.783	0.835	0.633	0.835	0.835	0.512	0.317	0.309	0.565	0.783	0.021	0.613
25	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
26	0.555	0.667	0.459	0.667	0.667	0.373	0.699	0.555	0.528	0.885	-0.018	0.571
27	-0.191	0.123	-0.468	0.123	0.123	0.278	0.113	-0.588	-0.266	0.295	-0.031	-0.131
28	0.305	0.528	0.021	0.528	0.528	0.697	0.024	-0.194	-0.060	-0.194	0.430	0.290
29	0.421	0.555	0.309	0.555	0.555	0.213	0.805	0.678	0.662	0.305	0.305	0.698
30	-0.080	0.096	-0.158	0.096	0.096	-0.309	0.179	-0.080	0.123	0.424	-0.535	-0.106
31	-0.194	-0.018	-0.319	-0.018	-0.018	-0.415	0.356	0.662	-0.060	-0.194	0.198	0.027
32	-0.027	0.266	-0.318	0.266	0.266	-0.029	-0.031	0.430	0.194	0.430	-0.037	-0.158
33	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
34	-0.555	-0.667	-0.459	-0.667	-0.667	-0.373	-0.224	-0.555	-0.528	-0.555	0.018	-0.037
35	0.555	0.667	0.459	0.667	0.667	0.373	0.224	0.555	0.528	0.555	0.528	0.037
36	0.421	0.555	0.309	0.555	0.555	0.213	0.805	0.678	0.662	0.305	0.305	0.698
37	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
38	-0.247	0.071	0.041	0.071	0.071	0.461	-0.284	0.246	-0.113	0.625	0.141	-0.209
39	0.885	1.000	0.835	1.000	1.000	0.788	0.224	0.555	-0.010	0.555	0.571	0.571
40	0.041	0.356	0.369	0.356	0.356	0.687	0.237	0.881	-0.121	-0.387	-0.356	-0.016
41	0.421	0.555	0.309	0.555	0.555	0.213	0.553	0.421	0.305	0.421	0.305	0.353
42	0.553	0.699	0.317	0.699	0.699	0.602	-0.339	0.052	0.356	0.052	-0.387	-0.325
43	0.553	0.699	0.317	0.699	0.699	0.602	-0.087	0.553	0.627	0.052	0.024	0.098
44	0.553	0.699	0.317	0.699	0.699	0.602	-0.087	0.553	0.627	0.052	0.024	0.098
45	0.553	0.699	0.317	0.699	0.699	0.602	-0.087	0.553	0.627	0.052	0.024	0.098
46	0.553	0.699	0.317	0.699	0.699	0.602	-0.087	0.553	0.627	0.052	0.024	0.098
47	0.423	0.743	0.409	0.743	0.743	0.682	-0.266	0.128	0.505	-0.287	0.087	0.409
48	0.487	-0.158	-0.234	-0.158	-0.158	-0.060	-0.266	0.487	0.087	-0.487	0.232	0.011
49	-0.081	-0.158	-0.234	-0.158	-0.158	-0.060	-0.266	0.487	0.087	-0.487	0.232	0.011
50	-0.139	-0.220	0.213	-0.220	-0.220	0.392	0.584	-0.081	0.121	-0.511	0.121	0.515
51	0.662	0.528	0.747	0.528	0.528	0.697	0.356	-0.194	-0.341	0.305	0.266	0.539
52	0.734	0.613	0.662	0.613	0.613	-0.019	0.179	0.424	0.123	0.424	0.309	0.468
53	0.471	0.312	0.318	0.312	0.312	0.654	0.353	0.027	0.256	0.027	0.484	0.616
54	0.841	0.743	0.815	0.743	0.743	0.251	0.419	0.128	0.158	0.128	0.158	0.325
55	0.052	0.224	-0.077	0.224	0.224	0.602	-0.087	0.052	-0.031	-0.588	-0.554	-0.399
56	0.295	0.123	0.101	0.123	0.123	0.505	0.113	-0.191	-0.031	-0.588	0.217	0.399
57	-0.295	-0.123	-0.101	-0.123	-0.123	-0.613	-0.495	0.191	-0.726	-0.495	-0.471	-0.399
58	-0.295	-0.123	-0.101	-0.123	-0.123	-0.613	-0.495	0.191	-0.726	-0.495	-0.471	-0.399

59	131	132	133	134	135	136	137	138	139	140	141	142	143
	0.487	0.158	0.158	0.234	0.158	0.158	-0.248	-0.178	0.487	-0.087	-0.017	0.232	0.309
60	0.342	0.172	0.172	0.459	0.172	0.172	-0.146	-0.146	-0.136	-0.046	-0.136	0.288	0.198
61	-0.017	0.158	0.158	-0.146	0.158	0.158	0.528	0.266	-0.017	-0.046	-0.017	0.232	-0.011
62	-0.363	-0.037	-0.037	-0.087	-0.037	-0.037	0.528	0.309	0.139	0.592	0.139	-0.027	-0.113
63	0.246	0.071	0.071	0.369	0.071	0.071	-0.266	0.443	-0.247	0.687	-0.246	0.409	0.052
64	-0.550	-0.400	-0.400	-0.418	-0.400	-0.400	-0.570	0.542	-0.136	0.288	-0.136	0.046	-0.057
65	0.787	0.220	0.220	0.213	0.220	0.220	0.384	-0.094	-0.081	-0.337	-0.081	0.121	0.016
66	0.783	-0.835	-0.835	-0.633	-0.835	-0.835	-0.512	0.077	-0.309	-0.319	-0.309	-0.021	-0.037
67	0.421	0.555	0.555	0.309	0.555	0.555	0.213	0.553	0.421	0.305	-0.309	-0.194	0.363
68	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990
69	0.555	0.667	0.667	0.459	0.667	0.667	0.373	0.224	0.555	0.528	0.555	0.528	0.037
70	0.471	0.312	0.312	0.318	0.312	0.312	0.480	0.353	-0.430	0.037	-0.430	0.027	0.618
71	-0.623	-0.295	-0.295	-0.409	-0.295	-0.295	0.104	-0.473	-0.128	-0.505	-0.623	-0.505	-0.505
72	0.081	-0.356	-0.356	0.213	-0.356	-0.356	0.384	0.237	-0.081	-0.113	-0.081	0.121	0.266
73	-0.421	-0.555	-0.555	-0.309	-0.555	-0.555	-0.213	0.052	-0.421	-0.062	-0.421	-0.305	0.139
74	0.309	-0.459	-0.459	-0.189	-0.459	-0.459	-0.087	0.0762	-0.309	-0.021	-0.309	-0.021	-0.087
75	0.061	-0.220	-0.220	-0.213	-0.220	-0.220	0.526	-0.237	-0.081	-0.121	-0.387	0.113	-0.266
76	0.387	-0.555	-0.555	-0.309	-0.555	-0.555	-0.087	0.094	-0.081	0.121	-0.387	-0.113	0.115
77	0.136	0.400	0.400	-0.158	0.400	0.400	-0.213	-0.052	-0.878	0.194	-0.421	0.194	0.139
78	-0.266	-0.071	-0.071	-0.041	-0.071	-0.071	0.570	0.176	-0.342	-0.046	0.136	-0.528	-0.198
79	0.052	-0.220	-0.220	0.369	-0.220	-0.220	-0.384	0.572	0.247	-0.141	0.247	0.113	-0.052
80	-0.623	-0.295	-0.295	-0.409	-0.295	-0.295	0.104	-0.473	-0.128	-0.505	-0.623	-0.505	-0.505
81	0.081	-0.356	-0.356	0.213	-0.356	-0.356	0.384	0.237	-0.081	-0.113	-0.081	0.121	0.266
82	-0.421	-0.555	-0.555	-0.309	-0.555	-0.555	-0.213	0.052	-0.421	-0.062	-0.421	-0.305	0.139
83	0.309	-0.459	-0.459	-0.189	-0.459	-0.459	-0.087	0.0762	-0.309	-0.021	-0.309	-0.021	-0.087
84	0.061	-0.220	-0.220	-0.213	-0.220	-0.220	0.526	-0.237	-0.081	-0.121	-0.387	0.113	-0.266
85	0.387	-0.555	-0.555	-0.309	-0.555	-0.555	-0.087	0.094	-0.081	0.121	-0.387	-0.113	0.115
86	0.136	0.400	0.400	-0.158	0.400	0.400	-0.213	-0.052	-0.878	0.194	-0.421	0.194	0.139
87	0.699	0.788	0.788	0.512	0.788	0.788	0.369	0.409	-0.387	0.113	-0.387	0.081	0.459
88	0.017	0.158	0.158	-0.146	0.158	0.158	-0.146	0.409	-0.139	-0.266	-0.139	-0.266	0.113
89	0.342	0.172	0.172	0.459	0.172	0.172	0.528	-0.403	-0.136	0.046	-0.136	0.046	0.198
90	0.061	0.356	0.356	-0.213	0.356	0.356	0.087	0.409	0.081	0.337	0.081	0.337	0.228
91	0.487	0.158	0.158	-0.087	0.158	0.158	0.060	-0.178	-0.017	-0.087	-0.017	0.232	0.309
92	-0.363	-0.037	-0.037	-0.087	-0.037	-0.037	-0.392	0.098	0.139	0.027	-0.017	-0.027	-0.376
93	0.194	0.018	0.018	-0.319	0.018	0.018	0.526	-0.094	-0.305	-0.027	-0.305	-0.430	0.592
94	-0.511	-0.356	-0.356	-0.613	-0.356	-0.356	-0.526	0.094	-0.081	-0.113	-0.511	0.121	-0.459
95	0.191	0.123	0.123	-0.468	0.123	0.123	0.278	0.113	-0.588	0.471	-0.295	-0.480	-0.131
96	0.471	0.312	0.312	0.577	0.312	0.312	0.029	-0.628	0.027	0.037	-0.430	-0.332	0.332
97	-0.246	-0.071	-0.071	-0.041	-0.071	-0.071	-0.220	0.289	0.247	0.346	-0.430	-0.194	0.207
98	0.424	0.096	0.096	0.158	0.096	0.096	0.459	0.256	0.424	0.613	0.194	0.266	0.206
99	0.194	0.018	0.018	-0.319	0.018	0.018	0.526	0.094	-0.081	-0.113	-0.511	0.121	-0.459
100	-0.363	-0.037	-0.037	-0.087	-0.037	-0.037	-0.392	0.098	0.139	0.027	-0.017	-0.027	-0.376
101	0.191	0.123	0.123	-0.468	0.123	0.123	0.278	0.113	-0.588	0.471	-0.295	-0.480	-0.131
102	0.471	0.312	0.312	0.577	0.312	0.312	0.029	-0.628	0.027	0.037	-0.430	-0.332	0.332
103	-0.246	-0.071	-0.071	-0.041	-0.071	-0.071	-0.220	0.289	0.247	0.346	-0.430	-0.194	0.207
104	0.424	0.096	0.096	0.158	0.096	0.096	0.459	0.256	0.424	0.613	0.194	0.266	0.206
105	0.194	0.018	0.018	-0.319	0.018	0.018	0.526	0.094	-0.081	-0.113	-0.511	0.121	-0.459
106	-0.363	-0.037	-0.037	-0.087	-0.037	-0.037	-0.392	0.098	0.139	0.027	-0.017	-0.027	-0.376
107	0.191	0.123	0.123	-0.468	0.123	0.123	0.278	0.113	-0.588	0.471	-0.295	-0.480	-0.131
108	0.471	0.312	0.312	0.577	0.312	0.312	0.029	-0.628	0.027	0.037	-0.430	-0.332	0.332
109	-0.246	-0.071	-0.071	-0.041	-0.071	-0.071	-0.220	0.289	0.247	0.346	-0.430	-0.194	0.207
110	0.424	0.096	0.096	0.158	0.096	0.096	0.459	0.256	0.424	0.613	0.194	0.266	0.206
111	0.194	0.018	0.018	-0.319	0.018	0.018	0.526	0.094	-0.081	-0.113	-0.511	0.121	-0.459
112	-0.363	-0.037	-0.037	-0.087	-0.037	-0.037	-0.392	0.098	0.139	0.027	-0.017	-0.027	-0.376
113	0.191	0.123	0.123	-0.468	0.123	0.123	0.278	0.113	-0.588	0.471	-0.295	-0.480	-0.131
114	0.471	0.312	0.312	0.577	0.312	0.312	0.029	-0.628	0.027	0.037	-0.430	-0.332	0.332
115	-0.246	-0.071	-0.071	-0.041	-0.071	-0.071	-0.220	0.289	0.247	0.346	-0.430	-0.194	0.207
116	0.424	0.096	0.096	0.158	0.096	0.096	0.459	0.256	0.424	0.613	0.194	0.266	0.206

1	144	145	146	147	148	149	150	151	152	153	154	155	156
1	0.098	0.087	-0.139	0.565	0.098	0.098	-0.364	-0.223	-0.092	-0.479	-0.565	0.309	-0.223
2	0.046	-0.516	-0.247	-0.090	-0.200	-0.298	-0.266	-0.447	0.220	-0.046	-0.220	-0.158	-0.447
3	0.403	0.234	-0.017	0.365	-0.178	0.403	-0.248	-0.332	0.528	-0.517	0.163	0.480	0.385
4	0.237	0.213	0.500	0.098	-0.094	-0.409	-0.687	-0.274	-0.526	-0.103	0.047	0.654	0.098
5	0.237	-0.369	-0.511	0.098	-0.788	-0.094	-0.087	-0.629	-0.087	-0.165	0.047	-0.241	-0.274
6	0.443	-0.247	-0.247	-0.090	-0.572	-0.288	-0.266	-0.447	-0.266	-0.315	0.521	0.158	-0.090
7	0.224	0.459	0.555	0.295	0.224	0.699	0.373	0.295	0.173	0.613	0.656	0.656	0.295
8	0.052	0.309	0.421	0.128	0.553	0.553	0.699	0.071	0.138	0.424	0.128	0.487	0.128
9	-0.178	-0.146	0.487	0.385	-0.403	0.266	0.060	-0.071	0.060	-0.342	0.163	0.163	-0.332
10	-0.256	0.209	0.424	0.305	-0.459	0.179	-0.019	-0.151	-0.019	-0.415	0.391	0.391	-0.151
11	0.052	0.309	0.421	0.623	0.052	0.052	0.213	0.128	0.213	-0.080	0.017	0.017	0.128
12	-0.325	-0.266	0.363	0.223	-0.509	0.098	0.392	-0.443	0.392	-0.479	0.770	-0.011	0.229
13	-0.403	-0.146	0.487	-0.071	-0.403	0.266	0.060	-0.332	0.060	-0.342	0.715	-0.266	-0.071
14	0.518	-0.101	-0.295	0.025	-0.113	-0.113	-0.278	-0.401	0.1505	0.485	0.087	-0.224	0.389
15	-0.178	0.487	0.487	-0.332	-0.178	-0.403	0.060	-0.071	0.528	-0.342	0.480	-0.266	-0.071
16	-0.087	-0.077	0.052	-0.266	-0.339	0.363	0.602	-0.266	0.602	-0.256	0.796	0.266	0.473
17	0.426	0.087	-0.119	0.229	0.098	-0.325	-0.092	-0.223	-0.364	0.468	-0.011	0.011	0.565
18	-0.077	0.189	0.309	0.077	-0.577	0.317	0.087	0.000	0.087	0.662	0.712	0.712	0.409
19	0.052	0.309	0.421	0.623	0.052	0.553	0.213	0.023	0.213	-0.080	-0.017	-0.017	0.128
20	-0.046	0.516	0.247	0.090	-0.046	-0.443	-0.220	-0.346	-0.461	-0.253	0.434	0.434	0.744
21	0.179	0.158	0.080	0.625	-0.459	-0.256	0.309	-0.151	-0.309	-0.022	0.071	0.639	0.305
22	0.620	0.266	-0.027	0.158	-0.353	-0.667	-0.480	-0.117	-0.460	0.231	0.113	0.113	0.158
23	-0.266	0.409	0.623	-0.191	0.473	0.019	0.251	-0.151	-0.104	-0.151	-0.071	-0.071	0.571
24	-0.077	0.189	0.309	0.077	0.317	-0.077	0.087	0.409	0.087	0.158	-0.146	0.146	0.499
25	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
26	0.224	0.459	0.555	0.295	0.699	0.224	-0.206	0.401	0.373	0.096	0.158	0.158	0.743
27	0.113	0.468	-0.191	-0.389	0.113	-0.223	-0.158	0.780	-0.415	-0.183	-0.468	0.569	-0.045
28	0.024	0.565	0.305	0.158	0.024	0.024	-0.206	0.128	0.599	0.027	-0.369	0.369	-0.027
29	0.052	0.309	0.421	0.128	0.553	0.052	0.213	0.128	0.599	-0.080	0.487	-0.017	0.623
30	-0.256	-0.209	0.424	-0.390	-0.256	0.179	-0.019	-0.390	0.328	0.294	-0.342	0.342	-0.151
31	-0.387	0.021	0.305	-0.287	-0.387	-0.387	-0.158	-0.191	0.328	0.389	0.500	0.232	-0.287
32	-0.353	-0.318	0.430	0.158	-0.353	-0.031	-0.433	-0.191	0.433	0.231	0.113	0.177	-0.588
33	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
34	-0.224	-0.835	-0.555	-0.743	-0.699	-0.224	-0.373	-0.295	-0.373	-0.096	-0.158	-0.656	-0.743
35	0.224	0.459	0.555	0.295	0.224	0.224	0.213	0.295	0.373	0.613	0.158	0.158	0.395
36	0.553	0.783	0.421	0.623	0.052	0.052	0.213	0.128	0.213	0.424	0.487	0.487	0.623
37	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
38	-0.288	0.041	0.246	-0.090	0.046	0.443	0.220	0.535	0.220	0.253	0.158	-0.434	-0.447
39	0.224	0.459	0.555	0.295	0.224	0.224	0.213	0.295	0.373	0.096	0.158	0.158	0.295
40	0.224	0.459	0.555	0.295	0.224	0.224	0.213	0.295	0.373	0.096	0.158	0.158	0.295
41	0.052	0.783	0.421	0.623	0.052	0.052	0.213	0.128	0.213	0.424	0.487	0.487	0.623
42	-0.339	0.317	0.553	0.255	0.339	-0.087	0.149	0.623	0.699	-0.080	-0.017	-0.178	0.019
43	-0.339	0.317	0.553	0.255	0.339	-0.087	0.149	0.623	0.699	-0.080	-0.017	-0.178	0.019
44	-0.339	0.317	0.553	0.255	0.339	-0.087	0.149	0.623	0.699	-0.080	-0.017	-0.178	0.019
45	-0.339	0.317	0.553	0.255	0.339	-0.087	0.149	0.623	0.699	-0.080	-0.017	-0.178	0.019
46	-0.339	0.317	0.553	0.255	0.339	-0.087	0.149	0.623	0.699	-0.080	-0.017	-0.178	0.019
47	-0.266	0.409	0.623	0.071	0.403	0.019	-0.104	0.626	0.104	-0.390	0.332	0.071	0.124
48	-0.266	0.409	0.623	0.071	0.403	0.019	-0.104	0.626	0.104	-0.390	0.332	0.071	0.124
49	-0.403	0.146	-0.487	0.071	-0.266	-0.578	-0.060	-0.385	0.248	-0.391	0.266	0.266	-0.385
50	0.237	0.500	0.387	0.098	0.237	-0.578	-0.060	0.071	0.248	-0.391	0.266	0.266	-0.385
51	0.325	-0.613	-0.363	-0.329	-0.426	-0.098	-0.392	0.229	0.092	-0.106	0.047	0.409	-0.229
52	0.356	0.021	0.662	-0.237	-0.459	-0.387	-0.309	-0.019	-0.415	-0.535	0.900	0.332	0.505
53	0.179	-0.209	-0.080	-0.151	-0.459	0.379	-0.309	0.305	-0.019	0.294	0.391	0.071	-0.390
54	0.071	-0.266	0.027	-0.158	-0.331	0.031	0.029	0.588	0.029	-0.231	-0.113	-0.113	-0.543
55	0.119	0.409	0.128	-0.191	-0.266	0.019	0.031	0.571	-0.104	0.305	-0.071	-0.071	-0.191
56	-0.087	0.317	0.052	-0.309	-0.473	0.662	0.602	-0.019	-0.181	-0.256	-0.178	-0.369	0.473
57	0.113	0.101	0.295	-0.309	-0.223	-0.774	-0.206	0.401	0.278	-0.695	-0.569	-0.025	-0.025
58	0.518	-0.415	-0.191	-0.401	-0.113	0.518	0.613	-0.401	-0.278	0.485	-0.224	-0.224	-0.401

	144	145	146	147	148	149	150	151	152	153	154	155	156
59	0.578	0.234	-0.017	0.395	-0.403	-0.178	0.060	-0.071	0.060	0.071	0.163	-0.266	-0.071
60	0.668	0.459	-0.550	0.452	-0.158	0.942	-0.146	0.452	-0.570	0.754	-0.305	0.287	-0.332
61	0.266	0.712	0.487	-0.071	0.266	-0.178	0.820	0.385	0.830	-0.517	0.163	-0.266	-0.385
62	-0.426	0.266	-0.363	0.443	-0.098	0.325	-0.071	0.223	-0.332	0.479	-0.309	0.011	-0.229
63	-0.572	-0.516	-0.247	0.090	-0.572	0.595	-0.266	0.346	-0.655	0.253	0.158	-0.434	-0.447
64	0.542	0.459	-0.550	0.037	0.176	-0.158	0.332	-0.332	0.332	0.379	-0.305	0.654	0.500
65	0.237	0.213	-0.081	0.098	-0.409	-0.094	-0.087	0.094	-0.512	-0.103	0.346	0.654	0.500
66	0.077	-0.189	-0.309	-0.409	-0.317	-0.317	0.512	0.409	-0.512	0.103	0.146	0.146	0.000
67	0.052	0.309	0.878	0.128	0.553	0.052	0.213	0.128	0.213	0.080	0.487	0.017	0.623
68	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990
69	0.224	0.459	0.555	0.295	0.224	0.224	0.373	0.295	0.373	0.613	0.158	0.158	0.295
70	0.353	0.318	0.027	-0.158	0.031	-0.295	0.029	0.217	-0.433	0.113	-0.113	-0.113	-0.158
71	-0.473	-0.409	-0.128	-0.571	0.266	0.266	0.104	0.191	0.104	0.151	0.385	-0.689	-0.124
72	0.237	0.213	-0.081	-0.274	-0.094	0.237	0.384	-0.274	-0.526	0.165	0.047	0.047	0.098
73	-0.052	-0.309	-0.421	-0.623	-0.052	-0.052	-0.213	-0.128	-0.213	-0.424	0.017	0.017	0.128
74	0.077	-0.633	-0.309	0.000	0.077	0.077	0.087	0.274	0.087	0.209	0.146	0.146	0.000
75	-0.237	0.369	0.511	-0.098	0.094	0.094	0.087	0.500	-0.087	0.165	0.241	-0.047	-0.098
76	0.237	0.213	-0.081	-0.274	-0.094	-0.094	0.087	0.274	0.087	0.424	0.017	0.017	0.128
77	-0.052	-0.309	-0.421	-0.623	-0.052	-0.052	-0.213	-0.128	-0.213	-0.424	0.017	0.017	0.128
78	0.542	-0.459	0.550	0.452	0.158	-0.176	0.332	0.669	0.332	0.097	0.158	0.047	-0.098
79	-0.443	-0.041	0.625	-0.535	-0.535	-0.409	0.266	0.090	0.266	0.359	0.512	-0.047	-0.098
80	-0.237	0.369	0.511	0.274	-0.535	0.094	0.087	0.500	0.266	-0.500	0.266	0.178	-0.019
81	-0.363	0.077	-0.553	0.266	0.339	-0.087	0.149	0.264	0.181	-0.500	0.332	0.332	0.191
82	-0.019	-0.409	-0.128	-0.124	0.266	-0.019	0.104	0.571	0.104	-0.165	0.512	-0.047	0.629
83	0.094	0.369	0.081	-0.098	-0.237	-0.325	0.087	0.274	-0.325	-0.165	0.309	-0.409	-0.223
84	-0.325	-0.266	0.698	-0.223	0.426	-0.325	0.392	0.229	0.092	-0.613	0.309	-0.409	-0.223
85	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990
86	0.002	0.512	0.213	0.682	-0.149	0.149	-0.016	0.104	-0.016	0.172	0.305	0.305	0.251
87	-0.176	-0.158	-0.342	0.332	-0.176	0.464	-0.332	0.452	0.332	0.332	0.305	0.305	-0.037
88	-0.181	0.512	-0.017	-0.071	-0.181	-0.181	-0.016	0.682	0.016	-0.459	0.163	0.248	-0.104
89	0.178	0.234	0.234	0.452	0.796	0.266	-0.570	0.071	0.266	-0.342	0.163	0.409	0.385
90	0.542	0.459	0.342	0.452	-0.158	0.158	0.583	0.098	-0.158	0.097	0.409	0.241	-0.071
91	0.237	0.369	0.081	0.629	0.409	-0.237	-0.583	-0.098	0.384	-0.342	0.480	0.266	-0.071
92	0.266	0.266	0.770	0.385	-0.178	-0.098	0.364	0.229	0.384	0.106	0.409	0.266	-0.071
93	-0.098	-0.031	-0.194	-0.229	0.387	-0.627	0.328	-0.098	-0.328	0.183	0.232	0.346	0.098
94	-0.024	-0.024	-0.081	-0.229	-0.426	-0.094	-0.087	-0.629	0.533	-0.359	0.346	0.346	0.025
95	-0.094	0.213	-0.081	0.649	-0.094	-0.233	0.278	0.629	0.278	-0.242	0.369	0.224	-0.025
96	-0.223	0.101	-0.191	-0.025	0.495	-0.233	-0.278	0.401	0.278	0.034	0.177	0.177	-0.158
97	-0.628	-0.266	0.471	-0.090	0.031	-0.295	-0.620	0.217	-0.620	-0.253	0.158	0.321	-0.346
98	-0.046	-0.041	0.247	0.090	0.046	0.288	-0.220	0.623	-0.220	-0.415	0.342	0.071	-0.151
99	-0.256	0.602	0.424	0.305	0.738	-0.459	0.309	0.623	0.309	-0.123	0.607	0.087	0.491
100	-0.024	0.319	0.194	0.287	-0.024	-0.356	-0.092	0.491	0.328	-0.206	0.011	-0.309	-0.229
101	0.325	0.266	-0.139	0.223	-0.098	-0.426	0.092	0.223	0.332	0.097	0.565	0.287	0.332
102	-0.176	-0.087	-0.342	-0.332	-0.542	0.158	-0.332	-0.452	-0.332	-0.309	0.607	-0.251	-0.251
103	0.181	-0.067	-0.699	-0.251	0.181	-0.149	0.384	0.104	0.339	0.309	0.820	0.060	-0.251
104	0.237	-0.369	-0.081	-0.251	-0.094	0.237	-0.384	-0.179	-0.339	0.103	0.047	-0.241	-0.274
105	0.459	0.209	0.080	0.151	0.256	-0.179	-0.459	0.151	0.459	-0.550	0.517	0.517	0.390
106	0.224	0.459	0.555	0.295	0.224	0.224	0.373	0.743	0.459	0.096	0.158	0.158	0.295
107	-0.224	-0.459	0.555	0.295	0.224	0.224	0.373	0.743	0.459	0.096	0.158	0.158	0.295
108	0.224	0.459	0.555	0.295	0.224	0.224	0.373	0.743	0.459	0.096	0.158	0.158	0.295
109	0.224	0.459	0.555	0.295	0.224	0.224	0.373	0.743	0.459	0.096	0.158	0.158	0.295
110	0.224	0.459	0.555	0.295	0.224	0.224	0.373	0.743	0.459	0.096	0.158	0.158	0.295
111	0.553	0.783	0.421	0.623	0.052	0.052	0.213	0.743	0.623	-0.080	0.487	0.158	0.623
112	0.224	0.459	0.555	0.295	0.224	0.224	0.373	0.743	0.459	0.096	0.158	0.158	0.295
113	0.553	0.783	0.421	0.623	0.052	0.052	0.213	0.743	0.623	-0.080	0.487	0.158	0.623
114	0.052	0.309	0.421	0.288	0.052	0.052	0.213	0.841	0.288	-0.080	0.017	-0.017	0.128
115	0.052	0.309	0.421	0.288	0.052	0.052	0.213	0.841	0.288	-0.080	0.017	-0.017	0.128
116	0.149	0.087	0.213	0.351	-0.181	0.862	0.369	0.682	0.016	0.459	-0.246	-0.246	-0.104

1	157	158	159	160	161	162	163	164	165	166	167
2	-0.325	0.229	-0.443	0.087	-0.092	-0.092	0.209	-0.092	-0.364	9.990	9.990
3	-0.577	0.090	-0.447	0.369	-0.266	0.060	-0.468	-0.266	-0.266	9.990	9.990
4	-0.178	0.385	-0.332	0.234	0.060	0.384	0.158	-0.087	-0.526	9.990	9.990
5	-0.094	0.098	-0.629	0.213	-0.087	0.384	-0.007	-0.087	-0.087	9.990	9.990
6	-0.705	0.098	-0.274	-0.369	0.383	-0.087	-0.256	0.384	-0.087	9.990	9.990
7	0.699	0.743	0.295	0.369	0.461	0.220	-0.007	0.220	-0.266	9.990	9.990
8	0.805	0.623	0.623	0.309	0.373	0.373	-0.071	0.373	0.373	9.990	9.990
9	0.266	-0.071	-0.071	0.712	-0.248	0.213	0.247	0.213	-0.248	9.990	9.990
10	0.500	-0.151	-0.151	0.662	-0.309	-0.019	0.315	-0.019	-0.309	9.990	9.990
11	0.092	0.128	0.128	0.309	0.213	0.213	0.247	0.213	-0.213	9.990	9.990
12	0.098	0.229	0.229	0.087	1.192	-0.364	-0.335	-0.092	-0.092	9.990	9.990
13	-0.178	0.385	-0.071	0.234	0.528	-0.248	-0.521	0.060	0.060	9.990	9.990
14	-0.495	0.025	0.025	-0.101	0.206	0.206	0.170	0.206	0.249	9.990	9.990
15	-0.178	-0.071	-0.071	0.712	0.060	0.528	-0.521	-0.248	-0.248	9.990	9.990
16	0.363	0.473	0.019	-0.077	0.602	-0.181	-0.443	0.149	0.149	9.990	9.990
17	-0.325	0.229	0.229	0.087	0.392	0.392	0.443	0.392	0.534	9.990	9.990
18	0.762	0.409	0.000	0.189	0.087	0.512	-0.041	0.007	0.087	9.990	9.990
19	0.553	0.128	0.623	0.309	0.213	0.213	0.247	0.213	0.213	9.990	9.990
20	-0.443	0.090	-0.346	0.715	0.655	0.655	0.023	0.655	0.666	9.990	9.990
21	0.500	-0.151	-0.151	0.158	-0.019	-0.029	0.071	-0.480	-0.309	9.990	9.990
22	-0.353	0.158	-0.713	0.266	-0.029	0.251	0.090	0.251	-0.480	9.990	9.990
23	0.019	-0.191	0.124	0.000	-0.104	0.251	0.516	0.087	0.251	9.990	9.990
24	-0.077	0.000	0.000	0.189	0.087	0.870	0.990	9.990	0.512	9.990	9.990
25	0.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990
26	0.224	0.295	0.295	0.459	0.373	0.788	0.486	9.990	0.788	9.990	9.990
27	0.495	-0.025	-0.707	0.101	0.278	0.505	-0.141	0.328	-0.415	9.990	9.990
28	0.024	-0.287	0.158	-0.319	0.699	-0.158	0.247	0.213	0.415	9.990	9.990
29	0.052	0.128	0.128	0.309	0.213	0.699	-0.253	-0.019	0.019	9.990	9.990
30	-0.459	-0.390	-0.390	0.662	0.309	0.779	0.113	0.328	-0.458	9.990	9.990
31	0.024	0.158	0.158	0.565	-0.158	0.328	0.291	0.029	-0.480	9.990	9.990
32	-0.031	-0.217	0.158	0.539	0.480	0.433	0.990	9.990	9.990	9.990	9.990
33	9.990	9.990	9.990	9.990	9.990	9.990	0.071	-0.373	-0.373	9.990	9.990
34	-0.224	-0.743	-0.295	-0.459	-0.373	0.788	-0.071	0.373	0.373	9.990	9.990
35	0.224	0.295	0.295	0.459	0.699	0.699	0.247	0.699	0.113	9.990	9.990
36	0.052	0.128	0.128	0.309	9.990	9.990	9.990	9.990	9.990	9.990	9.990
37	9.990	9.990	9.990	9.990	0.041	-0.266	-0.256	0.220	-0.266	9.990	9.990
38	0.046	-0.090	0.535	0.459	0.373	0.373	0.486	0.373	0.373	9.990	9.990
39	-0.237	0.295	-0.098	0.369	-0.384	0.087	-0.217	0.087	-0.384	9.990	9.990
40	0.553	0.128	0.841	0.309	0.213	0.213	0.247	0.699	0.181	9.990	9.990
41	0.363	0.019	0.473	-0.077	-0.181	-0.181	0.572	-0.181	-0.181	9.990	9.990
42	-0.087	0.019	0.019	-0.077	-0.181	-0.181	0.288	-0.181	-0.181	9.990	9.990
43	-0.087	0.019	0.019	-0.077	-0.181	-0.181	0.288	-0.181	-0.181	9.990	9.990
44	-0.087	0.019	0.019	-0.077	-0.181	-0.181	0.288	-0.181	-0.181	9.990	9.990
45	-0.087	0.019	0.019	-0.077	-0.181	-0.181	0.288	-0.181	-0.181	9.990	9.990
46	-0.087	0.019	0.019	-0.077	-0.181	-0.181	0.288	-0.181	-0.181	9.990	9.990
47	0.019	0.134	0.124	0.000	-0.104	-0.104	0.447	-0.104	-0.104	9.990	9.990
48	-0.266	-0.355	-0.887	0.146	-0.528	0.244	0.521	-0.528	-0.528	9.990	9.990
49	0.237	0.071	-0.385	0.146	-0.060	-0.060	0.158	-0.060	-0.526	9.990	9.990
50	0.237	0.274	0.098	0.213	-0.087	-0.087	-0.007	0.384	-0.526	9.990	9.990
51	0.325	-0.229	-0.816	0.266	-0.392	0.364	0.335	-0.392	-0.392	9.990	9.990
52	0.024	-0.491	-0.491	0.021	-0.158	0.158	0.113	-0.158	-0.158	9.990	9.990
53	0.353	0.500	-0.151	-0.209	-0.019	-0.309	0.046	-0.309	-0.158	9.990	9.990
54	-0.353	0.545	0.588	-0.266	0.029	0.029	0.149	0.480	0.029	9.990	9.990
55	-0.266	-0.191	0.124	0.000	-0.104	-0.104	0.090	0.251	0.251	9.990	9.990
56	-0.518	-0.019	0.473	-0.077	0.602	-0.181	-0.443	0.149	0.149	9.990	9.990
57	-0.518	-0.707	-0.389	0.101	0.505	-0.206	-0.385	-0.278	-0.206	9.990	9.990
58	-0.113	0.025	0.025	-0.415	0.206	-0.505	-0.535	-0.278	-0.535	9.990	9.990

59	157	158	159	160	161	162	163	164	165	166	167
	-0.178	0.365	0.385	-0.146	0.328	-0.248	0.158	0.060	0.528	9.990	9.990
60	-0.176	0.452	0.037	-0.148	-0.570	-0.146	-0.087	-0.144	-0.146	9.990	9.990
61	-0.178	0.332	0.689	-0.146	0.528	-0.146	-0.158	0.820	0.060	9.990	9.990
62	-0.098	0.223	0.223	0.266	-0.392	0.364	-0.023	0.092	-0.392	9.990	9.990
63	-0.098	0.090	0.223	0.369	0.220	0.461	-0.023	0.220	-0.266	9.990	9.990
64	-0.176	0.037	-0.032	-0.369	-0.146	0.332	-0.366	0.332	-0.718	9.990	9.990
65	0.237	0.649	0.098	-0.369	0.583	-0.526	-0.007	0.384	0.384	9.990	9.990
66	-0.317	0.000	-0.409	-0.389	-0.087	-0.087	-0.715	-0.087	-0.087	9.990	9.990
67	0.052	0.128	0.128	-0.389	0.213	0.699	0.247	0.213	0.699	9.990	9.990
68	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990
69	0.295	0.295	0.295	0.459	0.373	0.788	-0.071	0.373	0.373	9.990	9.990
70	-0.295	-0.158	-0.545	-0.459	0.480	0.029	-0.071	0.029	0.029	9.990	9.990
71	-0.019	-0.124	0.191	-0.409	-0.251	-0.251	-0.447	-0.082	0.104	9.990	9.990
72	-0.052	0.098	0.098	-0.369	0.384	-0.087	-0.227	0.503	0.384	9.990	9.990
73	-0.052	-0.128	-0.128	-0.309	-0.213	-0.699	-0.247	-0.213	-0.213	9.990	9.990
74	0.077	0.000	-0.409	-0.189	-0.512	-0.087	0.369	-0.512	-0.087	9.990	9.990
75	0.094	0.629	0.629	-0.213	0.526	-0.583	-0.830	0.087	0.087	9.990	9.990
76	0.237	-0.274	0.094	-0.369	-0.087	0.384	0.217	-0.087	0.384	9.990	9.990
77	-0.553	-0.623	-0.841	-0.309	-0.213	-0.213	-0.247	-0.332	-0.570	9.990	9.990
78	-0.176	-0.613	-0.037	-0.418	0.146	0.570	0.306	-0.332	0.570	9.990	9.990
79	-0.046	-0.346	0.090	-0.041	0.266	-0.220	-0.223	-0.220	-0.220	9.990	9.990
80	-0.237	0.274	-0.500	-0.213	0.087	-0.384	-0.217	-0.384	-0.384	9.990	9.990
81	0.264	0.493	-0.019	-0.317	-0.002	-0.149	0.443	-0.149	-0.002	9.990	9.990
82	0.264	0.191	-0.124	-0.000	0.104	-0.251	-0.447	-0.251	-0.251	9.990	9.990
83	-0.237	-0.500	-0.098	-0.500	0.526	0.007	0.227	0.526	0.526	9.990	9.990
84	-0.098	-0.443	-0.229	-0.087	-0.092	-0.364	-0.052	-0.092	-0.092	9.990	9.990
85	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990	9.990
86	0.149	-0.104	-0.104	-0.459	-0.146	-0.332	-0.369	-0.545	-0.016	9.990	9.990
87	-0.464	0.332	-0.464	-0.459	-0.146	-0.332	-0.369	-0.545	0.369	9.990	9.990
88	-0.181	0.251	0.682	0.087	-0.016	-0.016	0.266	0.369	0.060	9.990	9.990
89	-0.578	0.689	0.385	0.234	0.528	-0.060	-0.306	0.060	-0.146	9.990	9.990
90	-0.158	0.037	0.037	-0.418	-0.570	-0.570	-0.306	-0.146	-0.384	9.990	9.990
91	-0.237	0.274	-0.649	-0.369	0.226	0.526	0.007	-0.384	0.060	9.990	9.990
92	-0.403	-0.332	-0.332	0.234	0.060	-0.248	0.158	0.060	-0.060	9.990	9.990
93	-0.098	0.443	0.223	0.266	0.092	0.092	-0.443	0.364	0.392	9.990	9.990
94	-0.356	-0.780	-0.158	0.319	-0.328	0.415	0.409	0.158	0.158	9.990	9.990
95	0.586	0.098	-0.274	-0.369	0.384	-0.526	0.217	-0.526	-0.687	9.990	9.990
96	0.455	-0.025	0.401	0.415	-0.266	0.505	0.060	0.278	-0.206	9.990	9.990
97	-0.295	0.588	-0.545	0.577	-0.433	0.029	-0.071	-0.433	-0.433	9.990	9.990
98	-0.046	-0.346	0.090	-0.041	-0.220	-0.220	-0.223	-0.220	-0.220	9.990	9.990
99	-0.256	0.305	0.305	0.158	-0.309	-0.019	-0.505	-0.019	-0.019	9.990	9.990
100	-0.034	0.287	0.287	-0.021	0.158	-0.158	-0.113	0.158	0.415	9.990	9.990
101	-0.426	0.223	-0.223	-0.087	0.364	-0.392	-0.807	0.002	0.092	9.990	9.990
102	-0.542	-0.452	-0.037	-0.158	0.570	0.146	-0.146	0.146	0.146	9.990	9.990
103	-0.542	0.104	0.104	-0.512	0.016	0.016	-0.266	0.016	0.016	9.990	9.990
104	-0.034	-0.274	-0.274	-0.613	0.583	-0.526	-0.227	-0.037	-0.526	9.990	9.990
105	-0.179	-0.305	-0.625	0.209	0.019	-0.526	-0.046	0.309	0.019	9.990	9.990
106	0.224	0.295	0.295	0.459	0.373	0.373	0.486	0.373	0.373	9.990	9.990
107	0.224	0.295	0.295	0.459	0.373	0.373	0.486	0.373	0.373	9.990	9.990
108	0.224	0.295	0.295	0.459	0.373	0.373	0.486	0.373	0.373	9.990	9.990
109	0.224	0.295	0.295	0.459	0.373	0.373	0.486	0.373	0.373	9.990	9.990
110	0.224	0.295	0.295	0.459	0.373	0.373	0.486	0.373	0.373	9.990	9.990
111	0.052	0.128	0.128	0.309	0.699	0.213	0.625	0.699	0.213	9.990	9.990
112	0.224	0.295	0.295	0.459	0.373	0.373	0.486	0.373	0.373	9.990	9.990
113	0.052	0.128	0.128	0.309	0.699	0.213	0.625	0.699	0.213	9.990	9.990
114	0.052	0.128	0.128	0.309	0.699	0.213	0.625	0.699	0.213	9.990	9.990
115	0.553	0.128	0.623	0.309	0.213	0.213	0.625	0.213	0.213	9.990	9.990
116	-0.149	-0.104	0.251	0.087	-0.016	-0.016	0.266	-0.016	-0.016	9.990	9.990

APPENDIX B

Biserial Correlation Matrix

Variable

#1 -- Student's Age

#2 -- Student's Raw Score I.Q.

#3 -- Student's Raw Score Space Relations

#4 -- Student's Raw Score Mechanical Reasoning

BISERIAL CORRELATIONS

	1	2	3	4	5	6	7	8	9	10	11	12	13
1	-0.113	0.523	-0.079	-0.167	0.144	0.679	-0.002	-0.012	0.043	0.041	-0.010	0.180	0.020
2	-0.030	0.566	0.014	-0.071	0.125	0.751	-0.004	-0.039	0.084	0.107	0.030	0.223	0.029
3	0.001	0.676	0.022	-0.002	0.216	0.542	-0.015	-0.062	0.059	0.075	0.013	0.113	0.047
4	-0.117	0.456	-0.048	0.231	0.599	1.093	-0.007	-0.024	0.027	0.083	0.001	0.206	0.098
14		15	16	17	18	19	20	21	22	23	24	25	26
1	0.173	0.157	0.151	0.151	-0.013	-0.010	0.166	-0.076	0.203	-0.041	-0.031	0.999	-0.008
2	0.060	0.159	0.132	-0.044	0.016	0.020	0.135	0.025	0.265	-0.023	-0.005	0.999	-0.011
3	-0.013	0.098	0.054	-0.093	-0.001	0.030	0.115	0.020	0.354	-0.014	-0.014	0.999	-0.035
4	0.100	0.166	0.137	0.032	0.016	0.001	0.359	0.024	0.465	-0.042	0.001	0.999	-0.010
27		28	29	30	31	32	33	34	35	36	37	38	39
1	-0.009	-0.133	-0.013	-0.111	-0.124	0.112	0.999	3.053	-0.005	-0.007	0.999	0.011	-0.010
2	0.475	0.019	-0.022	0.047	-0.190	0.015	0.999	13.543	0.010	-0.005	0.999	0.207	-0.002
3	-0.295	0.162	-0.048	0.056	-0.144	0.087	0.999	1.825	0.011	-0.018	0.999	0.329	0.014
4	-0.210	-0.020	-0.005	-0.043	0.091	0.126	0.999	-7.513	0.017	0.014	0.999	-0.395	-0.005
40		41	42	43	44	45	46	47	48	49	50	51	52
1	0.109	-0.013	-0.067	-0.059	-0.058	-0.058	-0.058	-0.047	-0.449	-0.369	-0.217	-0.102	-0.132
2	0.367	-0.034	-0.027	-0.016	-0.016	-0.016	-0.016	-0.003	-0.256	-0.097	-0.466	-0.192	-0.031
3	0.269	-0.055	-0.000	0.060	0.060	0.060	0.060	0.063	-0.759	-0.185	-0.113	-0.038	-0.038
4	0.181	-0.027	-0.047	-0.012	-0.012	-0.012	-0.012	-0.020	-0.757	0.018	-0.218	-0.605	-0.002
53		54	55	56	57	58	59	60	61	62	63	64	65
1	-0.095	-0.138	-0.020	0.031	0.543	0.160	0.044	0.161	0.134	-0.864	0.033	0.141	0.199
2	-0.073	-0.196	-0.033	0.036	1.011	0.211	0.008	-0.327	0.091	-1.428	0.080	-0.014	0.122
3	0.024	-0.059	0.000	0.070	0.724	0.263	0.062	0.132	-0.031	-1.300	-0.032	-0.344	0.000
4	-0.051	0.031	-0.055	0.025	0.336	0.256	0.068	-0.036	-0.035	-0.247	0.055	-0.224	0.297
66		67	68	69	70	71	72	73	74	75	76	77	78
1	2.435	-0.012	9.999	-0.005	-0.123	0.915	0.170	2.579	2.709	0.125	-0.265	3.327	0.071
2	4.029	-0.023	9.999	0.010	0.357	0.590	0.210	-4.860	0.421	0.165	-0.010	7.992	0.170
3	6.391	-0.036	9.999	0.011	0.600	0.867	0.100	-2.009	1.047	0.337	0.032	6.171	0.173
4	3.700	-0.004	9.999	0.017	-0.012	0.868	0.298	-1.628	6.756	0.044	-0.476	0.907	-0.021
79		80	81	82	83	84	85	86	87	88	89	90	91
1	-0.166	-0.263	-0.905	1.192	0.123	0.015	9.999	-0.021	-0.231	-0.037	0.147	-0.295	-0.027
2	-0.098	0.036	-0.383	2.113	0.193	0.134	9.999	-0.082	0.159	-0.085	0.066	0.054	-0.113
3	-0.118	-0.118	-1.402	-0.694	-0.022	-0.094	9.999	-0.098	0.139	-0.047	-0.048	0.050	-0.160
4	0.016	-0.202	-2.013	0.291	0.165	0.022	9.999	-0.045	0.031	-0.017	0.027	-0.066	0.010

BISERIAL CORRELATIONS

	92	93	94	95	96	97	98	99	100	101	102	103	104
age 1	-0.069	-0.729	-0.829	-0.199	0.369	-0.073	-0.134	0.040	0.728	0.762	0.193	0.729	-0.021
EQ 2	0.004	-0.409	-0.132	-0.132	0.211	0.099	-0.007	0.019	0.197	1.001	0.257	1.970	-0.166
SR 3	0.026	0.632	-0.203	-0.442	-0.261	0.395	0.035	0.069	0.276	1.578	0.043	1.510	-0.002
MR 4	-0.124	0.554	-0.719	-0.236	-0.227	0.257	-0.046	0.017	0.735	0.382	0.251	-0.201	-0.529
	105	106	107	108	109	110	111	112	113	114	115	116	117
1	1.030	-0.010	-0.010	-0.010	-0.010	-0.010	-0.013	0.010	-0.013	-0.015	-0.019	-0.039	-0.027
2	0.267	-0.002	-0.002	-0.002	-0.002	-0.002	-0.019	-0.002	-0.019	-0.022	-0.001	0.012	0.009
3	-0.541	0.014	0.014	0.014	0.014	0.014	-0.014	0.014	-0.014	0.006	0.031	0.077	-0.029
4	1.118	-0.006	-0.006	-0.006	-0.006	-0.006	-0.012	0.006	-0.012	-0.019	-0.019	-0.025	-0.009
	118	119	120	121	122	123	124	125	126	127	128	129	130
1	-0.066	-0.020	-0.066	-0.010	-0.017	-0.017	-0.016	0.026	-0.016	-0.010	-0.010	-0.016	-0.028
2	0.028	-0.013	0.028	-0.002	-0.002	-0.002	0.008	0.008	0.006	-0.002	-0.002	-0.020	-0.014
3	0.079	0.015	0.079	0.014	0.016	0.016	0.008	0.032	0.028	0.014	0.012	0.012	0.035
4	0.041	0.008	0.041	-0.006	-0.015	-0.015	0.007	0.032	0.007	-0.006	-0.006	0.003	0.023
	131	132	133	134	135	136	137	138	139	140	141	142	143
1	-0.017	-0.010	-0.010	-0.023	-0.010	-0.010	0.043	-0.058	-0.010	0.002	-0.012	-0.086	-0.120
2	0.013	-0.002	-0.002	0.022	-0.002	-0.002	0.021	0.112	-0.031	0.029	-0.029	-0.113	-0.170
3	0.031	0.014	0.014	0.045	0.014	0.014	0.069	0.162	0.009	-0.046	-0.046	-0.116	-0.134
4	-0.016	-0.006	-0.006	-0.001	-0.006	-0.006	0.034	0.001	0.018	-0.002	-0.022	-0.036	-0.039
	144	145	146	147	148	149	150	151	152	153	154	155	156
1	0.056	-0.010	-0.006	-0.030	-0.035	0.048	0.115	0.040	0.033	-0.084	0.085	-0.049	0.022
2	-0.016	-0.061	-0.004	-0.064	0.006	0.038	0.069	0.036	0.034	-0.127	0.043	-0.108	-0.091
3	-0.007	-0.051	-0.023	-0.084	-0.105	0.014	0.023	0.063	-0.025	0.060	-0.016	-0.071	-0.071
4	0.023	-0.009	0.014	-0.050	-0.021	-0.003	0.050	0.025	-0.025	0.024	0.033	-0.107	0.036
	157	158	159	160	161	162	163	164	165	166	167	168	169
1	-0.049	-0.028	-0.040	-0.049	-0.050	0.030	-0.148	0.022	0.032	0.999	0.999	0.999	0.999
2	-0.046	-0.077	-0.022	0.023	0.037	0.036	-0.277	-0.008	-0.007	0.999	0.999	0.999	0.999
3	-0.072	0.007	-0.007	0.011	-0.010	-0.033	-0.349	0.030	0.007	0.999	0.999	0.999	0.999
4	0.020	0.022	0.010	0.033	0.065	0.037	-0.129	0.041	0.022	0.999	0.999	0.999	0.999

DIVISION POINT - COUNCIL

	92	93	94	95	96	97	98	99	100	101	102	103	104
1	7,000	22,000	21,000	17,000	19,000	15,000	11,000	8,000	21,000	22,000	13,000	27,000	17,000
2	7,000	22,000	21,000	17,000	19,000	15,000	11,000	8,000	21,000	22,000	13,000	27,000	17,000
3	7,000	22,000	21,000	17,000	19,000	15,000	11,000	8,000	21,000	22,000	13,000	27,000	17,000
4	7,000	22,000	21,000	17,000	19,000	15,000	11,000	8,000	21,000	22,000	13,000	27,000	17,000
	105	106	107	108	109	110	111	112	113	114	115	116	117
1	23,000	1,000	1,000	1,000	1,000	1,000	2,000	1,000	2,000	2,000	2,000	4,000	3,000
2	23,000	1,000	1,000	1,000	1,000	1,000	2,000	1,000	2,000	2,000	2,000	4,000	3,000
3	23,000	1,000	1,000	1,000	1,000	1,000	2,000	1,000	2,000	2,000	2,000	4,000	3,000
4	23,000	1,000	1,000	1,000	1,000	1,000	2,000	1,000	2,000	2,000	2,000	4,000	3,000
	118	119	120	121	122	123	124	125	126	127	128	129	130
1	7,000	2,000	7,000	1,000	2,000	2,000	2,000	3,000	2,000	1,000	1,000	2,000	3,000
2	7,000	2,000	7,000	1,000	2,000	2,000	2,000	3,000	2,000	1,000	1,000	2,000	3,000
3	7,000	2,000	7,000	1,000	2,000	2,000	2,000	3,000	2,000	1,000	1,000	2,000	3,000
4	7,000	2,000	7,000	1,000	2,000	2,000	2,000	3,000	2,000	1,000	1,000	2,000	3,000
	131	132	133	134	135	136	137	138	139	140	141	142	143
1	2,000	1,000	1,000	3,000	1,000	1,000	4,000	6,000	2,000	10,000	2,000	10,000	9,000
2	2,000	1,000	1,000	3,000	1,000	1,000	4,000	6,000	2,000	10,000	2,000	10,000	9,000
3	2,000	1,000	1,000	3,000	1,000	1,000	4,000	6,000	2,000	10,000	2,000	10,000	9,000
4	2,000	1,000	1,000	3,000	1,000	1,000	4,000	6,000	2,000	10,000	2,000	10,000	9,000
	144	145	146	147	148	149	150	151	152	153	154	155	156
1	6,000	3,000	2,000	5,000	6,000	6,000	4,000	5,000	4,000	8,000	7,000	7,000	2,000
2	6,000	3,000	2,000	5,000	6,000	6,000	4,000	5,000	4,000	8,000	7,000	7,000	2,000
3	6,000	3,000	2,000	5,000	6,000	6,000	4,000	5,000	4,000	8,000	7,000	7,000	2,000
4	6,000	3,000	2,000	5,000	6,000	6,000	4,000	5,000	4,000	8,000	7,000	7,000	2,000
	157	158	159	160	161	162	163	164	165	166	167		
1	6,000	5,000	5,000	3,000	4,000	4,000	11,000	4,000	4,000	0,000	0,000		
2	6,000	5,000	5,000	3,000	4,000	4,000	11,000	4,000	4,000	0,000	0,000		
3	6,000	5,000	5,000	3,000	4,000	4,000	11,000	4,000	4,000	0,000	0,000		
4	6,000	5,000	5,000	3,000	4,000	4,000	11,000	4,000	4,000	0,000	0,000		

DIVISION POINT - COUNT

	1	2	3	4	5	6	7	8	9	10	11	12	13
1	9,000	20,000	7,000	17,000	17,000	20,000	1,000	2,000	7,000	8,000	2,000	9,000	7,000
2	9,000	20,000	7,000	17,000	17,000	20,000	1,000	2,000	7,000	8,000	2,000	9,000	7,000
3	9,000	20,000	7,000	17,000	17,000	20,000	1,000	2,000	7,000	8,000	2,000	9,000	7,000
4	9,000	20,000	7,000	17,000	17,000	20,000	1,000	2,000	7,000	8,000	2,000	9,000	7,000
14	14	15	16	17	18	19	20	21	22	23	24	25	26
1	12,000	7,000	6,000	9,000	3,000	2,000	11,000	8,000	16,000	5,000	3,000	0,000	1,000
2	12,000	7,000	6,000	9,000	3,000	2,000	11,000	8,000	16,000	5,000	3,000	0,000	1,000
3	12,000	7,000	6,000	9,000	3,000	2,000	11,000	8,000	16,000	5,000	3,000	0,000	1,000
4	12,000	7,000	6,000	9,000	3,000	2,000	11,000	8,000	16,000	5,000	3,000	0,000	1,000
27	27	28	29	30	31	32	33	34	35	36	37	38	39
1	19,000	10,000	2,000	8,000	10,000	16,000	0,000	30,000	1,000	2,000	0,000	20,000	1,000
2	19,000	10,000	2,000	8,000	10,000	16,000	0,000	30,000	1,000	2,000	0,000	20,000	1,000
3	19,000	10,000	2,000	8,000	10,000	16,000	0,000	30,000	1,000	2,000	0,000	20,000	1,000
4	19,000	10,000	2,000	8,000	10,000	16,000	0,000	30,000	1,000	2,000	0,000	20,000	1,000
40	40	41	42	43	44	45	46	47	48	49	50	51	52
1	14,000	2,000	6,000	6,000	6,000	6,000	6,000	5,000	24,000	24,000	17,000	22,000	10,000
2	14,000	2,000	6,000	6,000	6,000	6,000	6,000	5,000	24,000	24,000	17,000	22,000	10,000
3	14,000	2,000	6,000	6,000	6,000	6,000	6,000	5,000	24,000	24,000	17,000	22,000	10,000
4	14,000	2,000	6,000	6,000	6,000	6,000	6,000	5,000	24,000	24,000	17,000	22,000	10,000
53	53	54	55	56	57	58	59	60	61	62	63	64	65
1	8,000	15,000	5,000	6,000	19,000	12,000	7,000	18,000	7,000	22,000	20,000	18,000	17,000
2	8,000	15,000	5,000	6,000	19,000	12,000	7,000	18,000	7,000	22,000	20,000	18,000	17,000
3	8,000	15,000	5,000	6,000	19,000	12,000	7,000	18,000	7,000	22,000	20,000	18,000	17,000
4	8,000	15,000	5,000	6,000	19,000	12,000	7,000	18,000	7,000	22,000	20,000	18,000	17,000
66	66	67	68	69	70	71	72	73	74	75	76	77	78
1	28,000	2,000	0,000	1,000	15,000	26,000	17,000	29,000	28,000	14,000	17,000	24,000	13,000
2	28,000	2,000	0,000	1,000	15,000	26,000	17,000	29,000	28,000	14,000	17,000	24,000	13,000
3	28,000	2,000	0,000	1,000	15,000	26,000	17,000	29,000	28,000	14,000	17,000	24,000	13,000
4	28,000	2,000	0,000	1,000	15,000	26,000	17,000	29,000	28,000	14,000	17,000	24,000	13,000
79	79	80	81	82	83	84	85	86	87	88	89	90	91
1	11,000	14,000	25,000	26,000	14,000	9,000	0,000	4,000	13,000	4,000	7,000	18,000	14,000
2	11,000	14,000	25,000	26,000	14,000	9,000	0,000	4,000	13,000	4,000	7,000	18,000	14,000
3	11,000	14,000	25,000	26,000	14,000	9,000	0,000	4,000	13,000	4,000	7,000	18,000	14,000
4	11,000	14,000	25,000	26,000	14,000	9,000	0,000	4,000	13,000	4,000	7,000	18,000	14,000

VARIABLE 1

VARIABLE 2

	4,000	16,000	36,000	54,000	76,000	96,000	116,000	136,000	156,000	176,000	196,000
65,000											
64,500											
63,000											
61,500											
60,000									1	1	
58,500											
57,000										11	
55,500									1		
54,000									1		
52,500									1		
51,000										11	
49,500											
48,000										1	
46,500									1		
45,000											
43,500									1		
42,000										1	
40,500										1	
39,000											
37,500										1	
36,000											
34,500										1	
33,000											
31,500											
30,000									2		
28,500									1		
27,000											
25,500										2	
24,000									1		
22,500											
21,000									1		
19,500											
18,000											
16,500											
15,000											
13,500											
12,000											
10,500											
9,000											
7,500											
6,000											
4,500											
3,000											
1,500											
0,000											
1,500											
3,000											
4,500											
6,000											
7,500											
9,000											

4,000 16,000 36,000 54,000 76,000 96,000 116,000 136,000 156,000 176,000 196,000

VARIABLE 1

VARIABLE 3

	4,000	16,000	36,000	56,000	76,000	96,000	116,000	136,000	156,000	176,000	196,000
69,750											
68,250											
66,750											
65,250											
63,750											
62,250											
60,750											
59,250											
57,750											
56,250											
54,750											
53,250											
51,750											
50,250											
48,750											
47,250											
45,750											
44,250											
42,750											
41,250											
39,750											
38,250											
36,750											
35,250											
33,750											
32,250											
30,750											
29,250											
27,750											
26,250											
24,750											
23,250											
21,750											
20,250											
18,750											
17,250											
15,750											
14,250	1										
12,750											
11,250											
9,750											
8,250											
6,750											
5,250											
3,750											
2,250											
0,750											
20,750	2										
22,250											
23,750											
25,250											
27,750											
30,750											
33,750											
36,750											
39,750											
42,750											
45,750											
48,750											
51,750											
54,750											
57,750											
60,750											
63,750											
66,750											
69,750											

4,000 16,000 36,000 56,000 76,000 96,000 116,000 136,000 156,000 176,000 196,000

VARIABLE 1

VARIABLE 4

	4,000	16,000	36,000	54,000	76,000	96,000	116,000	136,000	156,000	176,000	196,000
95,000											
93,000											
91,000											
89,000											
87,000											
85,000											
83,000											
81,000											
79,000											
77,000											
75,000											
73,000											
71,000											
69,000											
67,000											
65,000											
63,000											
61,000											
59,000											
57,000											
55,000											
53,000											
51,000											
49,000											
47,000											
45,000											
43,000											
41,000											
39,000											
37,000											
35,000											
33,000											
31,000											
29,000											
27,000	1										
25,000											
23,000											
21,000											
19,000											
17,000											
15,000											
13,000											
11,000											
9,000											
7,000											
5,000											
3,000											
1,000											
0											
03,000											
05,000											
04,000		16,000	36,000	54,000	76,000	96,000	116,000	136,000	156,000	176,000	196,000

VARIABLE 2

VARIABLE 3

	-9,000	-1,500	6,000	13,500	21,000	28,500	36,000	43,500	51,000	58,500	66,000
69,750											
68,250											
66,750											
65,250											
63,750											
62,250											
60,750											
59,250											
57,750											
56,250											
54,750											
53,250											
51,750											
50,250											
48,750											
47,250											
45,750											
44,250											
42,750											
41,250											
39,750											
38,250											
36,750											
35,250											
33,750											
32,250											
30,750											
29,250											
27,750											
26,250											
24,750											
23,250											
21,750											
20,250											
18,750											
17,250											
15,750											
14,250											
12,750											
11,250											
9,750											
8,250											
6,750											
5,250											
3,750											
2,250											
0,750											
-0,750											
-2,250											
-3,750											
-5,250											
-9,000											
-1,500											
6,000											
13,500											
21,000											
28,500											
36,000											
43,500											
51,000											
58,500											
66,000											

94

VARIABLE 2

VARIABLE 4

95,000	2,000	-1,500	6,000	21,000	28,500	36,000	43,500	51,000	58,500	66,000
93,000										
91,000										
89,000				1						
87,000										
85,000										
83,000										
81,000										
79,000										
77,000										
75,000										
73,000										
71,000										
69,000										
67,000										
65,000										
63,000										
61,000										
59,000										
57,000										
55,000										
53,000										
51,000										
49,000					1					
47,000										
45,000								1	1	
43,000					1			1	1	
41,000				1						
39,000						1	1	1	1	
37,000										
35,000										
33,000										
31,000										
29,000										
27,000					1	1	1	1	1	
25,000										
23,000								1	1	
21,000										
19,000				1	1	1	1			
17,000										
15,000										
13,000					1					
11,000										
9,000										
7,000										
5,000										
3,000										
1,000										
1,000										
3,000										
5,000										
9,000										
13,000										
17,000										
21,000										
25,000										
29,000										
33,000										
37,000										
41,000										
45,000										
49,000										
53,000										
57,000										
61,000										
65,000										
69,000										
73,000										
77,000										
81,000										
85,000										
89,000										
93,000										
95,000										

2

9,000 -1,500 6,000 21,000 28,500 36,000 43,500 51,000 58,500 66,000

APPENDIX C

Variable Frequency Count

VARIABLE	RESPONSE	FREQUENCY	
1 QUESTION #1	0	9	
1	1	22	
2	0	20	
2	1	11	
3	0	17	
3	1	24	PICTORIAL DIAGRAM OF LATHE TOOL BIT
4	0	17	
4	1	14	
5	0	17	
5	1	14	
6	0	20	
6	1	11	
7 QUESTION #1	0	1	
7	1	30	
8	0	2	
8	1	29	
9	0	7	
9	1	24	
10	0	8	
10	1	23	VERBAL MATCHING PROBLEM OF THREAD PARTS
11	0	2	
11	1	29	
12	0	9	
12	1	22	
13	0	7	
13	1	24	
14 QUESTION #1	0	12	
14	1	19	
15	0	17	
15	1	24	
16	0	6	
16	1	25	
17	0	9	
17	1	22	
18	0	3	
18	1	26	PICTORIAL THREAD IDENTIFICATION OF PARTS
19	0	2	
19	1	29	
20	0	11	
20	1	20	
21	0	8	
21	1	23	
22	0	16	
22	1	15	
23 QUESTION #1	0	1	
23	1	26	
24	0	3	
24	1	28	
25	0	31	
25	1	1	
26	0	30	DRAWING OF CROSS-SECTION VIEWS OF THREADS
26	1	19	
27	0	12	
27	1	10	
28	0	21	
28	1	2	
29 QUESTION #1	0	29	
29	1	8	
30	0	23	
30	1	10	
31	0	21	PICTORIAL LATHE I.D.
31	1	16	
32	0	15	
32	1	31	
33	0	1	
33	1	31	

34	5	0	30
34		1	1
35	6	0	1
35		1	30
36	7	0	2
36		1	29
37	8	1	31
38		0	20
38	9	1	11
39		0	1
39	10	1	30
40		0	14
40	11	1	17
41		0	2
41	12	1	29
42		0	6
42	13	1	25
43	QUESTION #1	0	4
43		1	25
44	2	0	6
44		1	25
45	3	0	6
45		1	25
46	4	0	6
46		1	25
47	5	0	25
47		1	26
48	6	0	24
48		1	7
49	QUESTION #1	0	24
49		1	7
50	2	0	17
50		1	14
51	3	0	22
51		1	9
52	4	0	10
52		1	21
53	5	0	8
53		1	23
54	6	0	15
54		1	16
55	7	0	5
55		1	26
56	8	0	6
56		1	25
57	9	0	19
57		1	12
58	10	0	12
58		1	19
59	11	0	7
59		1	24
60	12	0	18
60		1	13
61	13	0	7
61		1	24
62	14	0	22
62		1	9
63	15	0	20
63		1	11
64	16	0	18
64		1	13
65	17	0	17
65		1	14
66	18	0	28
66		1	5
67	19	0	2

PICTORIAL LATHE I.D.

PICTORIAL CALIPERS I.D.

MULTIPLE CHOICE QUESTIONS

MULTIPLE CHOICE QUESTIONS

67	20	1	29
68		1	31
69		0	1
70	21	1	30
71	22	0	15
72	23	0	16
73	24	1	26
74	25	0	5
75	26	1	17
76	27	0	14
77	28	1	29
78	29	0	2
79	30	1	28
80	31	0	3
81	32	1	14
82	33	0	17
83	34	1	15
84	35	0	18
85	36	1	11
86	37	0	20
87	38	1	14
88	39	0	17
89	40	1	9
90	41	0	22
91	42	1	31
92	43	0	4
93	44	1	27
94	45	0	7
95	46	1	24
96	47	0	18
97	48	1	13
98	49	0	15
99	50	1	14
100	51	0	17
101	52	1	7

MULTIPLE CHOICE QUESTIONS

29	2	24
31	1	22
1	0	9
30	1	21
15	0	10
16	1	17
26	0	14
5	1	19
17	0	12
14	1	15
29	0	16
2	1	11
28	0	20
3	1	14
14	0	17
17	1	9
15	0	22
18	1	31
11	0	4
20	1	27
14	0	7
17	1	24
25	0	18
6	1	13
26	0	15
5	1	14
14	0	17
17	1	19
9	0	12
22	1	15
31	0	16
4	1	11
27	0	20
7	1	14
24	0	17
18	1	9
13	0	22
15	1	31
14	0	4
17	1	27
7	0	7
24	1	24
18	0	18
13	1	13
15	0	15
14	1	14
17	0	17
7	1	9
24	0	22
18	1	31
13	0	4
15	1	27
14	0	7
17	1	24
9	0	18
22	1	13
31	0	15
4	1	14
27	0	17
7	1	19
24	0	12
18	1	15
13	0	16
15	1	11
14	0	20
17	1	14
9	0	17
22	1	9
31	0	22
4	1	31
27	0	4
7	1	27
24	0	7
18	1	24
13	0	18
15	1	13
14	0	15
17	1	14
9	0	17
22	1	19
31	0	12
4	1	15
27	0	16
7	1	11
24	0	20
18	1	14
13	0	17
15	1	9
14	0	22
17	1	31
9	0	4
22	1	27
31	0	7
4	1	24
27	0	18
7	1	13
24	0	15
18	1	14
13	0	17
15	1	19
14	0	12
17	1	15
9	0	16
22	1	11
31	0	20
4	1	14
27	0	17
7	1	9
24	0	22
18	1	31
13	0	4
15	1	27
14	0	7
17	1	24
9	0	18
22	1	13
31	0	15
4	1	14
27	0	17
7	1	19
24	0	12
18	1	15
13	0	16
15	1	11
14	0	20
17	1	14
9	0	17
22	1	9
31	0	22
4	1	31
27	0	4
7	1	27
24	0	7
18	1	24
13	0	18
15	1	13
14	0	15
17	1	14
9	0	17
22	1	19
31	0	12
4	1	15
27	0	16
7	1	11
24	0	20
18	1	14
13	0	17
15	1	9
14	0	22
17	1	31
9	0	4
22	1	27
31	0	7
4	1	24
27	0	18
7	1	13
24	0	15
18	1	14
13	0	17
15	1	19
14	0	12
17	1	15
9	0	16
22	1	11
31	0	20
4	1	14
27	0	17
7	1	9
24	0	22
18	1	31
13	0	4
15	1	27
14	0	7
17	1	24
9	0	18
22	1	13
31	0	15
4	1	14
27	0	17
7	1	19
24	0	12
18	1	15
13	0	16
15	1	11
14	0	20
17	1	14
9	0	17
22	1	9
31	0	22
4	1	31
27	0	4
7	1	27
24	0	7
18	1	24
13	0	18
15	1	13
14	0	15
17	1	14
9	0	17
22	1	19
31	0	12
4	1	15
27	0	16
7	1	11
24	0	20
18	1	14
13	0	17
15	1	9
14	0	22
17	1	31
9	0	4
22	1	27
31	0	7
4	1	24
27	0	18
7	1	13
24	0	15
18	1	14
13	0	17
15	1	19
14	0	12
17	1	15
9	0	16
22	1	11
31	0	20
4	1	14
27	0	17
7	1	9
24	0	22
18	1	31
13	0	4
15	1	27
14	0	7
17	1	24
9	0	18
22	1	13
31	0	15
4	1	14
27	0	17
7	1	19
24	0	12
18	1	15
13	0	16
15	1	11
14	0	20
17	1	14
9	0	17
22	1	9
31	0	22
4	1	31
27	0	4
7	1	27
24	0	7
18	1	24
13	0	18
15	1	13
14	0	15
17	1	14
9	0	17
22	1	19
31	0	12
4	1	15
27	0	16
7	1	11
24	0	20
18	1	14
13	0	17
15	1	9
14	0	22
17	1	31
9	0	4
22	1	27
31	0	7
4	1	24
27	0	18
7	1	13
24	0	15
18	1	14
13	0	17
15	1	19
14	0	12
17	1	15
9	0	16
22	1	11
31	0	20
4	1	14
27	0	17
7	1	9
24	0	22
18	1	31
13	0	4
15	1	27
14	0	7
17	1	24
9	0	18
22	1	13
31	0	15
4	1	14
27	0	17
7	1	19
24	0	12
18	1	15
13	0	16
15	1	11
14	0	20
17	1	14
9	0	17
22	1	9
31	0	22
4	1	31
27	0	4
7	1	27
24	0	7
18	1	24
13	0	18
15	1	13
14	0	15
17	1	14
9	0	17
22	1	19
31	0	12
4	1	15
27	0	16
7	1	11
24	0	20
18	1	14
13	0	17
15	1	9
14	0	22
17	1	31
9	0	4
22	1	27
31	0	7
4	1	24
27	0	18
7	1	13
24	0	15
18	1	14
13	0	17
15	1	19
14	0	12
17	1	15
9	0	16
22	1	11
31	0	20
4	1	14
27	0	17
7	1	9
24	0	22
18	1	31
13	0	4
15	1	27
14	0	7
17	1	24
9	0	18
22	1	13
31	0	15
4	1	14
27	0	17
7	1	19
24	0	12
18	1	15
13	0	16
15	1	11
14	0	20
17	1	14
9	0	17
22	1	9
31	0	22
4	1	31
27	0	4
7	1	27
24	0	7
18	1	24
13	0	18
15	1	13
14	0	15
17	1	14
9	0	17
22	1	19
31	0	12
4	1	15
27	0	16
7	1	11
24	0	20
18	1	14
13	0	17
15	1	9
14	0	22
17	1	31
9	0	4
22	1	27
31	0	7
4	1	24
27	0	18
7	1	13
24	0	15
18	1	14
13	0	17
15	1	19
14	0	12
17	1	15
9	0	16
22	1	11
31	0	20
4	1	14
27	0	17
7	1	9
24	0	22
18	1	31
13	0	4
15	1	27
14	0	7
17	1	24
9	0	18
22	1	13
31	0	15
4	1	14
27	0	17
7	1	19
24	0	12
18	1	15
13	0	16
15	1	11
14	0	20
17	1	14
9	0	17
22	1	9
31	0	22
4	1	31
27	0	4
7	1	27
24	0	7
18	1	24
13	0	18
15	1	13
14	0	15
17	1	14
9	0	17
22	1	19
31	0	12
4	1	15
27	0	16
7	1	11
24	0	20
18	1	14
13	0	17
15	1	9
14	0	22
17	1	31
9	0	4
22	1	27
31	0	7
4	1	24
27	0	18
7	1	13
24	0	15
18	1	14
13	0	17
15	1	19
14	0	12
17	1	15
9	0	16
22	1	11
31	0	20
4	1	14
27	0	17
7	1	9
24	0	22
18	1	31
13	0	4
15	1	27
14	0	7
17	1	24
9	0	18
22	1	13

MULTIPLE CHOICE QUESTIONS

101	1	9
102	0	13
103	1	18
104	0	27
105	1	4
106	0	17
107	1	14
108	0	23
109	1	6
110	0	1
111	1	30
112	0	1
113	1	30
114	0	1
115	1	30
116	0	1
117	1	30
118	0	2
119	1	29
120	0	2
121	1	29
122	0	4
123	1	27
124	0	3
125	1	28
126	0	7
127	1	24
128	0	1
129	1	30
130	0	2
131	1	29
132	0	2
133	1	29
134	0	2
135	1	29
136	0	2
137	1	29
138	0	2
139	1	29
140	0	2
141	1	29
142	0	2
143	1	29
144	0	2
145	1	29
146	0	2
147	1	29
148	0	2
149	1	29
150	0	2
151	1	29
152	0	2
153	1	29
154	0	2
155	1	29
156	0	2
157	1	29
158	0	2
159	1	29
160	0	2
161	1	29
162	0	2
163	1	29
164	0	2
165	1	29
166	0	2
167	1	29
168	0	2
169	1	29
170	0	2
171	1	29
172	0	2
173	1	29
174	0	2
175	1	29
176	0	2
177	1	29
178	0	2
179	1	29
180	0	2
181	1	29
182	0	2
183	1	29
184	0	2
185	1	29
186	0	2
187	1	29
188	0	2
189	1	29
190	0	2
191	1	29
192	0	2
193	1	29
194	0	2
195	1	29
196	0	2
197	1	29
198	0	2
199	1	29
200	0	2

PICTORIAL LATHE HOLDING DEVICES

PICTORIAL STEEL RULE MEASUREMENT PROBLEMS

PICTORIAL MICROMETER MEASUREMENT PROBLEMS

134	5	1	28
135	0	1	1
136	6	1	30
137	7	0	1
138	8	0	30
139	9	0	4
140	10	0	27
141	11	0	6
142	12	0	25
143	13	0	2
144	14	0	29
145	15	0	2
146	16	0	10
147	17	0	21
148	18	0	2
149	19	0	29
150	20	0	10
151	21	0	21
152	22	0	2
153	23	0	29
154	24	0	10
155	25	0	21
156	26	0	2
157	27	0	29
158	28	0	10
159	29	0	21
160	30	0	2
161	31	0	29
162	32	0	10
163	33	0	21
164	34	0	2
165	35	0	29
166	36	0	10
167	37	0	21
168	38	0	2
169	39	0	29
170	40	0	10
171	41	0	21
172	42	0	2
173	43	0	29
174	44	0	10
175	45	0	21
176	46	0	2
177	47	0	29
178	48	0	10
179	49	0	21
180	50	0	2
181	51	0	29
182	52	0	10
183	53	0	21
184	54	0	2
185	55	0	29
186	56	0	10
187	57	0	21
188	58	0	2
189	59	0	29
190	60	0	10
191	61	0	21
192	62	0	2
193	63	0	29
194	64	0	10
195	65	0	21
196	66	0	2
197	67	0	29
198	68	0	10
199	69	0	21
200	70	0	2
201	71	0	29
202	72	0	10
203	73	0	21
204	74	0	2
205	75	0	29
206	76	0	10
207	77	0	21
208	78	0	2
209	79	0	29
210	80	0	10
211	81	0	21
212	82	0	2
213	83	0	29
214	84	0	10
215	85	0	21
216	86	0	2
217	87	0	29
218	88	0	10
219	89	0	21
220	90	0	2
221	91	0	29
222	92	0	10
223	93	0	21
224	94	0	2
225	95	0	29
226	96	0	10
227	97	0	21
228	98	0	2
229	99	0	29
230	100	0	10
231	101	0	21
232	102	0	2
233	103	0	29
234	104	0	10
235	105	0	21
236	106	0	2
237	107	0	29
238	108	0	10
239	109	0	21
240	110	0	2
241	111	0	29
242	112	0	10
243	113	0	21
244	114	0	2
245	115	0	29
246	116	0	10
247	117	0	21
248	118	0	2
249	119	0	29
250	120	0	10
251	121	0	21
252	122	0	2
253	123	0	29
254	124	0	10
255	125	0	21
256	126	0	2
257	127	0	29
258	128	0	10
259	129	0	21
260	130	0	2
261	131	0	29
262	132	0	10
263	133	0	21
264	134	0	2
265	135	0	29
266	136	0	10
267	137	0	21
268	138	0	2
269	139	0	29
270	140	0	10
271	141	0	21
272	142	0	2
273	143	0	29
274	144	0	10
275	145	0	21
276	146	0	2
277	147	0	29
278	148	0	10
279	149	0	21
280	150	0	2
281	151	0	29
282	152	0	10
283	153	0	21
284	154	0	2
285	155	0	29
286	156	0	10
287	157	0	21
288	158	0	2
289	159	0	29
290	160	0	10
291	161	0	21
292	162	0	2
293	163	0	29
294	164	0	10
295	165	0	21
296	166	0	2
297	167	0	29
298	168	0	10
299	169	0	21
300	170	0	2
301	171	0	29
302	172	0	10
303	173	0	21
304	174	0	2
305	175	0	29
306	176	0	10
307	177	0	21
308	178	0	2
309	179	0	29
310	180	0	10
311	181	0	21
312	182	0	2
313	183	0	29
314	184	0	10
315	185	0	21
316	186	0	2
317	187	0	29
318	188	0	10
319	189	0	21
320	190	0	2
321	191	0	29
322	192	0	10
323	193	0	21
324	194	0	2
325	195	0	29
326	196	0	10
327	197	0	21
328	198	0	2
329	199	0	29
330	200	0	10
331	201	0	21
332	202	0	2
333	203	0	29
334	204	0	10
335	205	0	21
336	206	0	2
337	207	0	29
338	208	0	10
339	209	0	21
340	210	0	2
341	211	0	29
342	212	0	10
343	213	0	21
344	214	0	2
345	215	0	29
346	216	0	10
347	217	0	21
348	218	0	2
349	219	0	29
350	220	0	10
351	221	0	21
352	222	0	2
353	223	0	29
354	224	0	10
355	225	0	21
356	226	0	2
357	227	0	29
358	228	0	10
359	229	0	21
360	230	0	2
361	231	0	29
362	232	0	10
363	233	0	21
364	234	0	2
365	235	0	29
366	236	0	10
367	237	0	21
368	238	0	2
369	239	0	29
370	240	0	10
371	241	0	21
372	242	0	2
373	243	0	29
374	244	0	10
375	245	0	21
376	246	0	2
377	247	0	29
378	248	0	10
379	249	0	21
380	250	0	2
381	251	0	29
382	252	0	10
383	253	0	21
384	254	0	2
385	255	0	29
386	256	0	10
387	257	0	21
388	258	0	2
389	259	0	29
390	260	0	10
391	261	0	21
392	262	0	2
393	263	0	29
394	264	0	10
395	265	0	21
396	266	0	2
397	267	0	29
398	268	0	10
399	269	0	21
400	270	0	2
401	271	0	29
402	272	0	10
403	273	0	21
404	274	0	2
405	275	0	29
406	276	0	10
407	277	0	21
408	278	0	2
409	279	0	29
410	280	0	10
411	281	0	21
412	282	0	2
413	283	0	29
414	284	0	10
415	285	0	21
416	286	0	2
417	287	0	29
418	288	0	10
419	289	0	21
420	290	0	2
421	291	0	29
422	292	0	10
423	293	0	21
424	294	0	2
425	295	0	29
426	296	0	10
427	297	0	21
428	298	0	2
429	299	0	29
430	300	0	10
431	301	0	21
432	302	0	2
433	303	0	29
434	304	0	10
435	305	0	21
436	306	0	2
437	307	0	29
438	308	0	10
439	309	0	21
440	310	0	2
441	311	0	29
442	312	0	10
443	313	0	21
444	314	0	2
445	315	0	29
446	316	0	10
447	317	0	21
448	318	0	2
449	319	0	29
450	320	0	10
451	321	0	21
452	322	0	2
453	323	0	29
454	324	0	10
455	325	0	21
456	326	0	2
457	327	0	29
458	328	0	10
459	329	0	21
460	330	0	2
461	331	0	29
462	332	0	10
463	333	0	21
464	334	0	2
465	335	0	29
466	336	0	10
467	337	0	21
468	338	0	2
469	339	0	29
470	340	0	10
471	341	0	21
472	342	0	2
473	343	0	29
474	344	0	10
475	345	0	21
476	346	0	2
477	347	0	29
478	348	0	10
479	349	0	21
480	350	0	2
481	351	0	29
482	352	0	10
483	353	0	21
484	354	0	2
485	355	0	29
486	356	0	10
487	357	0	21
488	358	0	2
489	359	0	29
490	360	0	10
491	361		

APPENDIX D

Theoretical Test

NAME _____

DATE _____

104

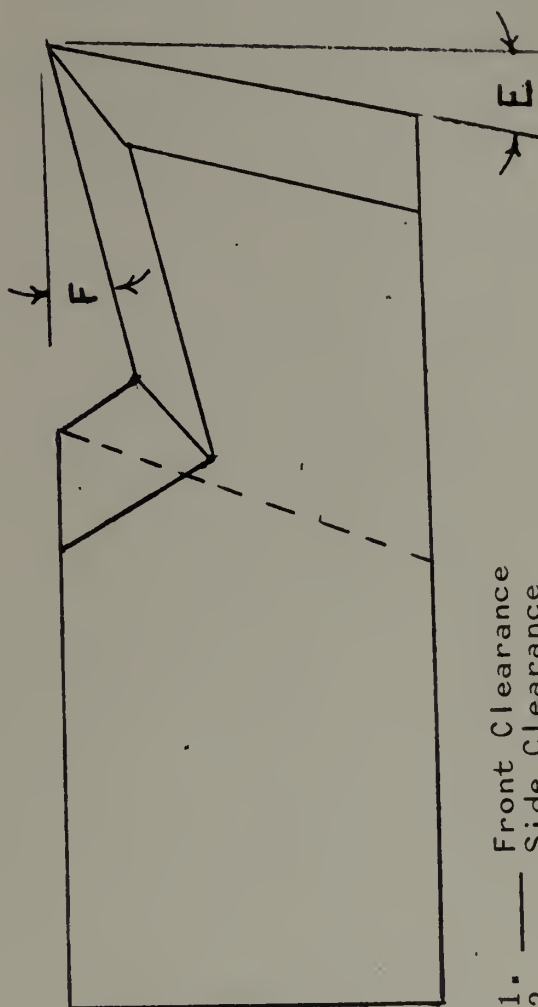
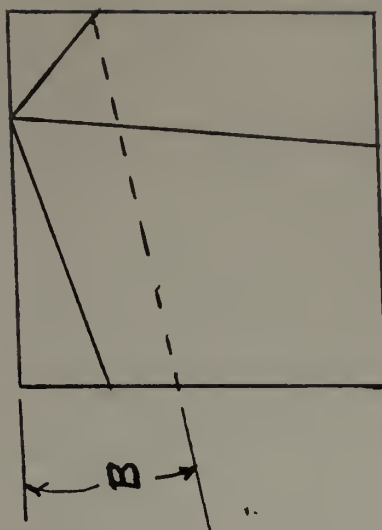
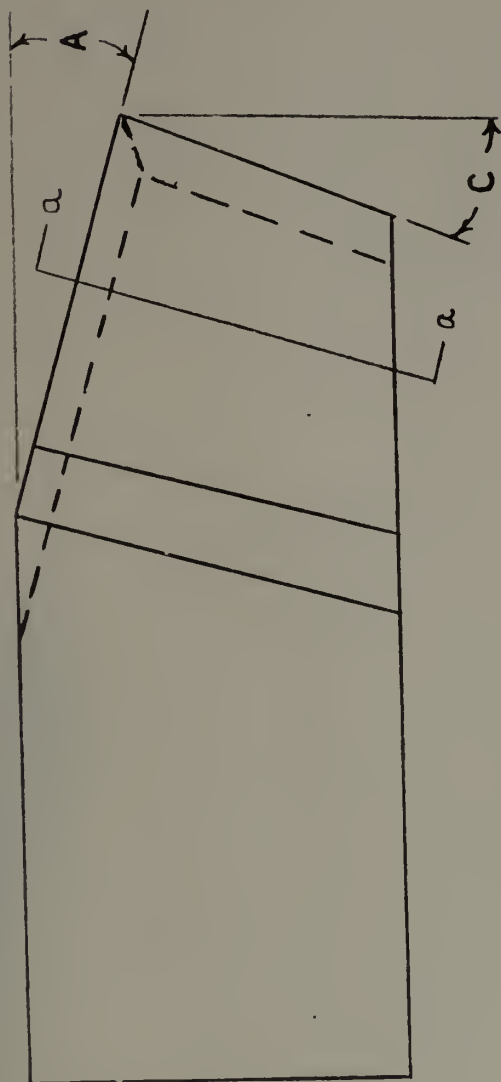
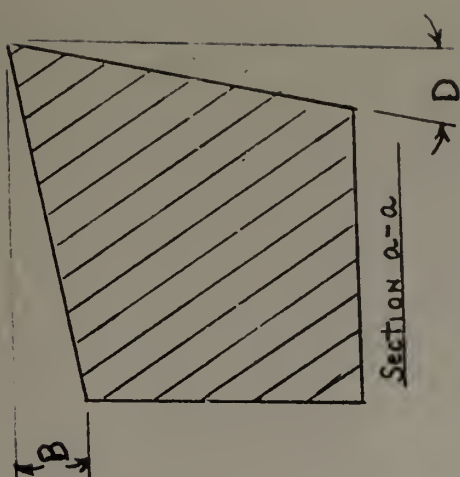
To produce the piece as indicated on the attached blue print one must proceed through a variety of steps. So that it can be determined approximately how long it would take on a production basis and to identify the critical operations, you are asked to mark the time spent on performing the operations to complete a specific task. This time breakdown will help to estimate the average time it should take to complete each task.

This time has no reflection on your grade; but will help in future planning of shop instruction and production jobs.

Time operation was;

STARTED FINISHED

xample)	<u>9:15</u>	<u>10:06</u>	Measure and cutting off stock to proper length
	<u> </u>	<u> </u>	Face off to length and center drill both ends
	<u> </u>	<u> </u>	Rough turn to largest diameter
	<u> </u>	<u> </u>	Layout for the various diameters
	<u> </u>	<u> </u>	Straight turn all diameters to indicated dimensions
	<u> </u>	<u> </u>	Perform necking operations
	<u> </u>	<u> </u>	Taper turn
	<u> </u>	<u> </u>	Chamfer for threads
	<u> </u>	<u> </u>	Cut 1 1/4-12 thread
	<u> </u>	<u> </u>	Cut 3/4-16 thread
	<u> </u>	<u> </u>	Break all sharp corners
	<u> </u>	<u> </u>	Lay out for position of tap drill
	<u> </u>	<u> </u>	Drill hole to tap drill size
	<u> </u>	<u> </u>	Cut 1/4 - 20 thread with tap



4. Side Rake
5. Side Cutting Edge
6. End Cutting Edge

1. Front Clearance
2. Side Clearance
3. Back Rake

MATCHING:

106

Match the following thread terminology with their appropriate meanings.

Terms

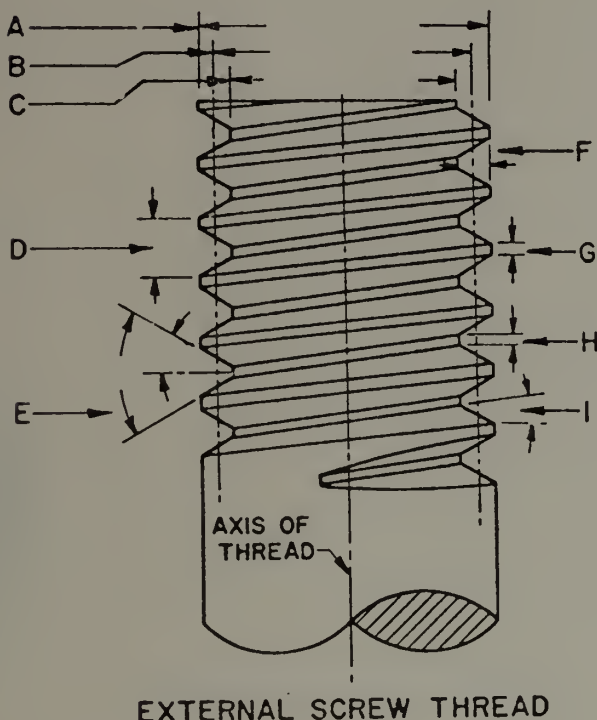
- _____ 1. Major diameter
- _____ 2. Minor diameter
- _____ 3. Pitch diameter
- _____ 4. Pitch
- _____ 5. Lead
- _____ 6. Crest
- _____ 7. Root

Meanings

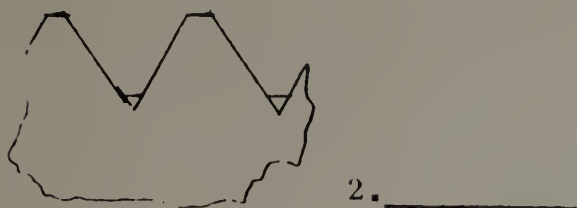
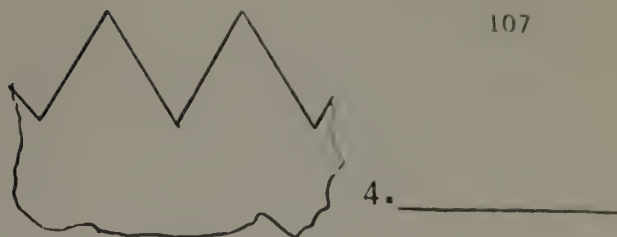
- A. Distance from a point on one thread to a corresponding point on the next adjacent thread
- B. Top surface adjoining the two sides of a thread
- C. Distance a thread moves along its axis in one revolution
- D. Smallest diameter on a screw thread
- E. Bottom surface adjoining the two sides of adjacent threads
- F. Largest diameter on a screw thread
- G. Diameter of an imaginary cylinder that cuts a screw thread at a point where the width of the groove and thread is equal

IDENTIFICATION:

Note the lettered parts of the external screw thread pictured below. Place the given letter of each part in the blank preceding its proper name.

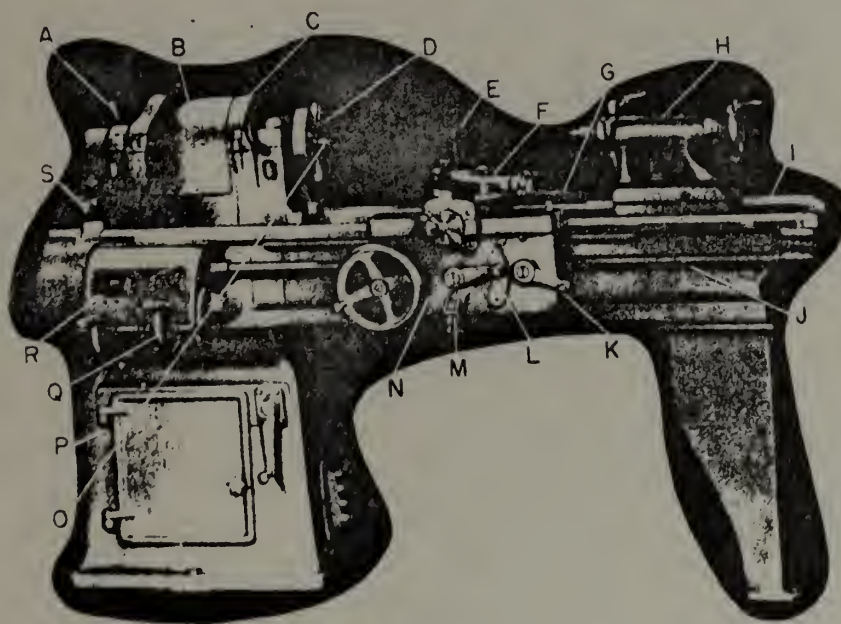


- _____ 1. Helix angle
- _____ 2. Root
- _____ 3. Crest
- _____ 4. Thread angle
- _____ 5. Major diameter
- _____ 6. Minor diameter
- _____ 7. Pitch
- _____ 8. Pitch diameter
- _____ 9. Thread depth



A. Whitworth
 B. Brown and Sharpe worm
 C. Acme
 D. Unified

E. Square
 F. National Pipe
 G. Sharp Vee
 H. American National



1. What type of standard toolholder permits machining close to the lathe chuck or faceplate?
A. Right-hand D. Cutoff
B. Left-hand E. Threading
C. Straight
2. High-speed steel tool bits require a standard toolholder with a back rake angle of
A. 0 D. 16 1/2
B. 6 1/2 E. 21
C. 12
3. The recommended nose radius for a general-purpose turning tool designed for moderate to light turning is
A. 1/64"
B. 1/32"
C. 3/64"
D. 1/16"
E. 1/4"
4. The force applied to a cutting tool in a lathe comes from
A. one direction
B. two directions
C. three directions
D. four directions
5. The part of the lathe tool that does the actual cutting is the
A. rake
B. clearance
C. cutting edge
D. point
6. The lathe tool ground to produce a curved surface to size is called
A. right-hand turning tool
B. left-hand turning tool
C. boring tool
D. forming tool
7. A right-hand turning tool cuts toward the
A. headstock
B. tailstock
C. back of the lathe
D. front of the lathe
8. Most lathe cutting tools are made of
A. carbon steel
B. manganese steel
C. high-speed steel
D. cemented carbides
9. What is/are the external cylindrical machining operation(s) that may be performed on a lathe?
A. Straight turning
B. Taper turning
C. Facing and shoulder turning
D. Drilling
E. All of the above.
10. When the tool travels along the work parallel to the lathe bed, it is referred to as what kind of feed?
A. Cross
B. Longitudinal
C. Radial
D. End
E. Tangential
11. The feeding and threading mechanism includes three basic components; the end gear train, the quick change gear box, and the
A. tailstock and hand wheel
B. step cone pulley
C. bull gear and lock pin
D. carriage and apron assembly
E. back gear and reversing lever
12. The part of the carriage assembly that may be set at any angle is called the
A. tool post
B. cross slide
C. compound rest
D. halfnut lever
E. feed change lever
13. The effective angle of side clearance or side relief should not be more than
A. 1 deg.
B. 6 deg.
C. 12 deg.
D. 16 deg.

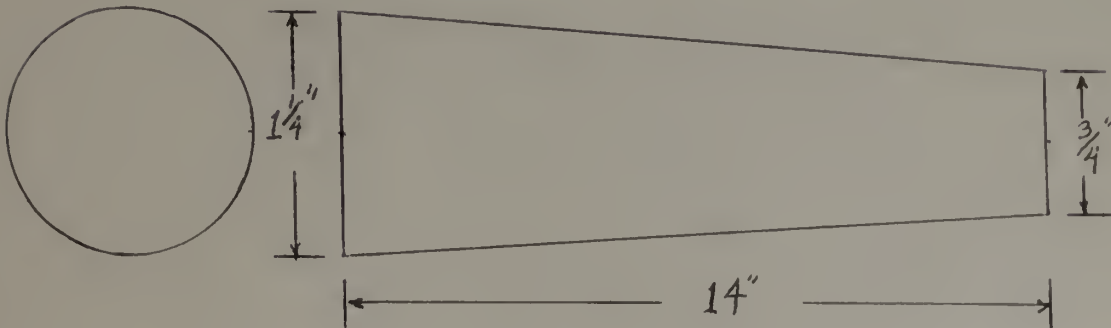
14. When turning steel, the tool bit should be set
 - A. $1/32$ " below center
 - B. on center
 - C. $1/32$ " above center
 - D. $1/16$ " above center
15. The front-relief or front-clearance angle for average work is
 - A. 2 deg.
 - B. 5 deg.
 - C. 10 deg.
 - D. 16 deg.
16. The most difficult part of the tool bit to grind is the
 - A. side relief
 - B. back rake
 - C. front radius
 - D. side rake
17. The tool bit is held in the tool-holder at an angle of
 - A. 5 to 9 deg.
 - B. 10 to 15 deg.
 - C. 16 to 20 deg.
 - D. 21 to 26 deg.
18. The point of an American National thread-cutting tool is ground to an angle of
 - A. $29\frac{1}{2}$ deg.
 - B. 30 deg.
 - C. 60 deg.
 - D. 70 deg.
19. Cutting speed is expressed in
 - A. revolutions per minute
 - B. revolutions per foot
 - C. inches per minute
 - D. feet per minute
20. Work held between centers of a lathe is driven by
 - A. chuck
 - B. a dog
 - C. a mandrel
 - D. the dead center
21. In order that the layout lines on a finished surface may be seen, prepare the surface of the shaft with
 - A. white lead
 - B. lamp black
 - C. dykem blue
 - D. oil
22. When centering, feed the work into the drill by
 - A. turning the headstock
 - B. turning the tailstock handwheel
 - C. moving the carriage
 - D. using the automatic feed
23. Universal chucks in good condition will hold work accurately to within
 - A. .0002" or .0003"
 - B. .002" or .003"
 - C. .020" or .030"
 - D. .040" or .050"
 - E. .200" or .300"
24. The collet chuck is used mainly for production and precision holding of small work. Each collet is marked with the size it can hold. What is the maximum and minimum that one can vary from this size before danger of springing the collet is possible?
 - A. no variation
 - B. .001"
 - C. .002"
 - D. .003"
 - E. .004"
25. The commonly used chuck which permits the most rapid centering of cylindrical stock is the
 - A. universal type
 - B. spindle type
 - C. independent type
 - D. collet type
 - E. step and closure type

36. Each line on the graduated micro-meter collar of the cross-feed screw is usually equal to
A. 0.0001 in.
B. 0.001 in.
C. 0.0002 in.
D. 0.005 in.
37. Holding a piece in a 3-jaw chuck for facing eliminates the
A. centering operation
B. use of the center rest
C. cutting-off operation
D. use of the follower rest
38. When facing, place the point of tool
A. at the center of the work
B. a little below the center
C. a little above the center
D. anywhere
39. The tool used for facing is a
A. flat-nose tool
B. radius tool
C. side tool
D. parting tool
40. When the tail of the dog is placed in the faceplate slot, it should
A. wiggle in the slot
B. be tight in the slot
C. be a drive fit
D. touch the bottom of the slot
41. In straight turning, the tool is set
A. exactly on the center of the work
B. 1/16 in. below the center
C. 1/8 in. below the center
D. at 30 deg. to the center
42. When the cross slide is moved into the work 0.010 in., the diameter of the piece is reduced by
A. 0.010 in.
B. 0.020 in.
C. 0.040 in.
D. 0.060 in.
43. If, when turning work held between centers, the job tapers smaller on the headstock end
A. adjust the tailstock away from yourself
B. adjust the tailstock toward yourself
C. take a smaller cut
D. reverse the feed
44. When stopping the lathe at the end of a cut to take a measurement, first
A. shut off the power
B. throw out the clutch
C. move the cross-feed handle back
D. throw out the feed
45. When turning work to a shoulder
A. feed by hand for the entire length of the piece
B. use the automatic feed for the entire length of the piece
C. use the automatic feed to within 1/16 in. and finish by hand
D. feed from the shoulder to the end of the piece
46. When turning to a square corner, grind the tool
A. round-shaped
B. more than 90 deg.
C. less than 90 deg.
D. V-shaped
47. Large fillets are best roughed out with a
A. forming tool
B. sharp V tool
C. round-nose tool
D. cut-off tool
48. When starting to knurl a turned surface,
A. press the knurls lightly against the surface
B. force the knurls into the surface with hand pressure
C. feed the knurls into the surface with the automatic feed
D. reverse the automatic cross-feed

49. The preferred method of holding work for knurling is
A. in a 3-jaw chuck
B. in a 4-jaw chuck
C. between centers
D. in a drill chuck
50. The center holes of a mandrel have an angle of
A. 45 deg.
B. 50 deg.
C. 60 deg.
D. 75 deg.
51. A cut-off tool and a parting tool are names given to
A. denote difference in sizes
B. tools used in different machines
C. the same tool
D. different lathe tools
52. The widest part of the cut-off tool is
A. the bottom
B. the center
C. the cutting edge
D. 1/16 in. below the top
53. The front-clearance angle of a cut-off tool for steel is approximately
A. 30 deg.
B. 20 deg.
C. 10 deg.
D. 5 deg.
54. The cut-off tool requires
A. clearance on both sides
B. clearance on the left side only
C. clearance on the right side only
D. no side clearance
55. To sharpen a cut-off blade, grind it
A. on top
B. on the left side
C. on the right side
D. on the front
56. The cut-off tool should be set
A. slightly above the center
B. slightly below the center
C. on dead center
D. 1/16 in. below center

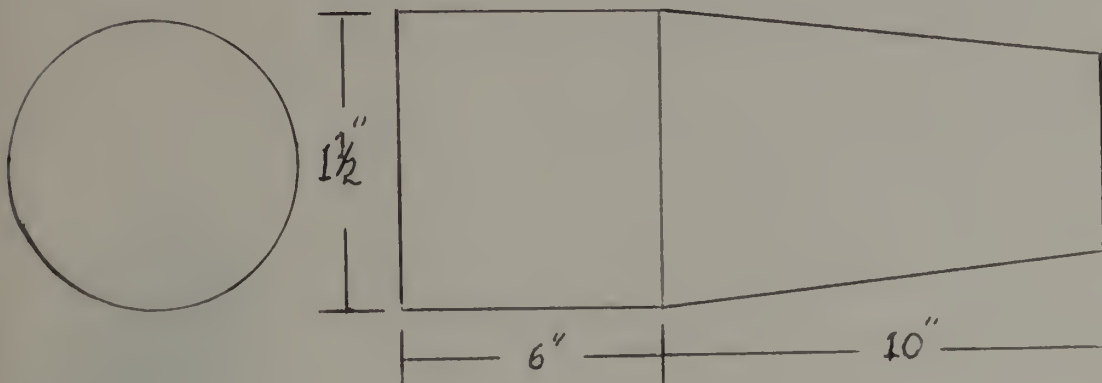
57. Calculate the setover for turning the taper in the figure below.

- A. $1/8''$
- B. $3/16''$
- C. $1/4''$
- D. $5/16''$
- E. $3/8''$



58. Determine the setover for turning a $1/2''$ per foot taper on the workpiece shown in the figure below.

- A. $1/3''$
- B. $1/2''$
- C. $2/3''$
- D. $3/4''$
- E. $7/8''$



MATCHING:

Select the correct description for each of the calipers in the figures below. Put the letter of the correct answer in the blanks under the figures.

Answers

- A. Spring joint - outside
- B. Firm joint - outside
- C. Spring joint - inside
- D. Firm joint - inside



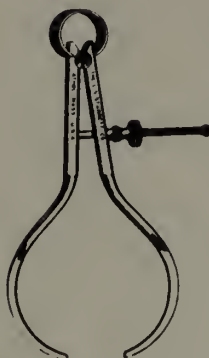
_____ 1.



_____ 4.



_____ 2.



_____ 3.



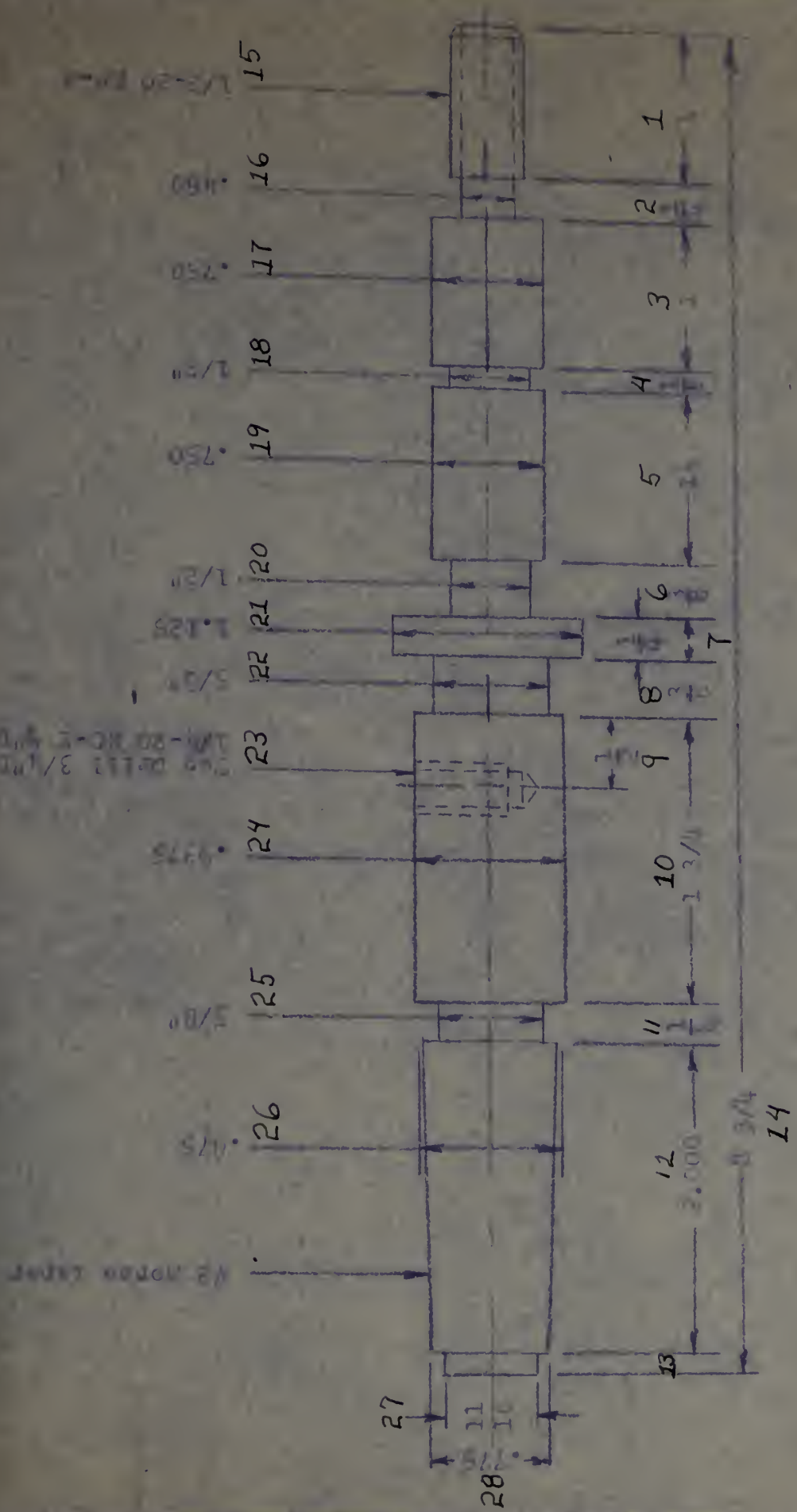
_____ 6.



_____ 5.

APPENDIX E

Performance Test



Scale 1-1	1/2" = 1"	1/2" = 1"
1/2" = 1"	1/2" = 1"	1/2" = 1"

APPENDIX F

Definition of Terms

DEFINITION OF TERMS

Related - Students enrolled in a Vocational course are scheduled for part of their in-school time in a related classroom. This is where they receive instruction in those aspects of math, science and history that applies to their chosen vocation.

Shop - The word shop designates the physical area where students apply the knowledge they have gained in the related classroom. It also designates the setting where students receive further instruction in the physical manipulative skills that are required to perform an operation or to complete a job. It is an area that sometimes approximates the actual working conditions and equipment that the students will experience in their chosen vocation.

Performance Objective - The author has chosen the term Performance Objective for it seems to communicate to the Vocational Instructors in the field what is needed as an objective. The use of Performance Objective in this proposal is to designate an objective that contains the Performance that a student is seeking to acquire, the Conditions under which he will be expected to demonstrate that performance, and the extent to which he should be proficient in demonstrating his competence.

Criterion Reference Test - In this proposed study, tests will be developed in which test items are correlated to the Performance Objectives of the course. Correct responses on the test items will satisfactorily meet the objectives with which those items are correlated.

Study Team - The study team consists of one machine shop related teacher, one lab teacher, and the author of the study.

REFERENCES CITED

1. Adams, Georgia S. Measurement and Evaluation. New York: Holt, Rinehart, and Winston, 1964.
2. Bloom, Benjamin. Taxonomy of Educational Objectives. New York: Longman, Green and Company, 1956.
3. CAM. Comprehensive Achievement Monitoring. Trend, Spring, 1969.
4. DuBois, Philip, Teel, Kenneth S., and Peterson, Robert L. "On the Validity of Performance Tests." Educational and Psychological Measurement. Vol. 14, No. 4, Winter, 1954, pp. 605-616.
5. Finch, Curtis and Impellitteri, Joseph. The Development of Valid Work Performance Evaluation Measures. Paper presented at American Vocational Association Annual Convention, New Orleans, Louisiana, December, 1970.
6. Glaser, Robert and Klaus, David J. "Proficiency Measurement: Assessing Human Performance," Psychological Principles of System Development. Edited by Robert Gagne. New York: Holt, Rinehart and Winston, 1962, pp. 419-474.
7. Harmon, Paul. "A Classification of Performance Objective Behaviors in Job Training Programs." Educational Technology. January, 1969, pp. 5-12.
8. Lien, Arnold J. Measurement and Evaluation of Learning. Dubuque, Iowa: William C. Brown Company, 1967.
9. Mager, Robert. Performance Criteria Conference. Quoted from a speech given at Stanford University, 1965.
10. Massachusetts Feedback System for Vocational Education. Publication by Massachusetts State Department of Education, June, 1970.
11. McGuire, Christine and Babbott, David. "Simulation Technique in Measurement of Problem Solving Skills." Journal of Educational Measurement. Vol. 4, No. 1, Spring, 1967, pp. 1-10.
12. National Industrial Teacher Education Survey. Division of Occupational Education, Massachusetts State Department of Education, January, 1968.
13. Nunnally, Jim C. Psychometric Theory. New York: McGraw Hill Book Company, 1967.

14. Pantz, Adolf and Olive, Thomas C. National Occupational Competency Testing Project Report on Phase One. The State of the Art of Occupational Competency Testing, Rutgers, The State University, New Brunswick, New Jersey, June, 1970.
15. Reilly, Robert R. A Normative Study of the Vocational Technical Teacher Education Candidate. The State University College at Oswego, New York, 1967. Unpublished paper.
16. Rinsland, H. D. Constructing Tests and Grading in Elementary and High School Subjects. New York: Prentice Hall, 1946, p. 1.
17. Stuit, Dewey B. Personnel Research and Test Development in the U. S. Bureau of Naval Personnel. Princeton, New Jersey: Princeton University Press, 1947, 513 pages.
18. Walden, J. W. The University of Ancient Greece. New York: Charles Scribners Sons, 1910, pp. 58-135.
19. Wilson, Clark C. "On-The-Job and Operational Criteria." Training Research and Education. Edited by Robert Glaser. Pittsburgh: University of Pittsburgh Press, 1962, pp. 347-337.

